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AUTHOR	Wilkinson, Cheryl Yelich; Sanchez, Julita Elemi Hernandez
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ABSTRACT

The annotated bibliography examines research regarding achievement attribution and the limited English proficient (LEP) handicapped child. The first major topic area addressed is the application of attribution theory to special populations. Research describing attribution patterns of handicapped children and comparing the patterns to those of nonhandicapped children is the subject of the second section. A third section presents studies which examine situational influences on handicapped children's attributions, and a fourth explores interactions of children's attributions and instruction. Studies of attribution retraining are then presented. Despite general support for the notion that handicapped and low achieving students' attributions for academic successes and failures differ from normal achievers, studies on attempts to alter those perceptions report mixed success. Future research directions are proposed. (CL)

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ATTRIBUTION THEORY, LEARNED HELPLESSNESS AND ACHIEVEMENT: IMPLICATIONS FOR THE EXCEPTIONAL HISPANIC CHILD

by

Cheryl Yelich Wilkinson

and

Julita Elemi Hernandez Sanchez

Handicapped Minority Research Institute
on Language Proficiency
Director: Alba A. Ortiz
The University of Texas at Austin
College of Education
Department of Special Education

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Introduction

Student motivation has traditionally been considered to be an important determinant of classroom behavior and achievement (e.g., Coleman, 1964). However, studies which consider the motivational characteristics of limited English proficient (LEP) or bilingual handicapped children or the determinants of their attitudes about school are noticeably absent from educational and psychological literature.

One general framework which has been used to describe attitudes toward achievement and continued effort is attribution theory. Briefly, attribution theory as it has been applied to achievement is based on the assumption that following an achievement event (either a success or a failure), individuals determine reasons for the event's outcome. These reasons (or causal attributions) will determine affect about the event, expectancies for the future, and ultimately, behavior in a new achievement situation. For example, a child who believes he or she has failed a test because of a lack of ability may feel that the situation is "hopeless", expect to fail again, and study even less for a subsequent exam. In contrast, a child who believes that the failure occurred because of inadequate preparation may feel unhappy about the failure but still expect to pass the next exam if he/she tries harder, and, as a result, study more for a subsequent exam. The same event, therefore, produces a different response in a new achievement situation, based on the actor's causal beliefs about past achievement outcomes.

Attribution theory also suggests that the reasons people give for success or failure (e.g., lack of ability or inadequate preparation) can be classified along each of three dimensions: (a) an internality-externality dimension which classifies causes as within or outside of the actor, (b) a stability

dimension which classifies causes as varying or fixed across time and situations, and (c) a controllability dimension which classifies causes as either subject to or free from volitional control by the actor. Attribution theorists suggest that it is these three dimensions of an attribution, rather than the simple reason that an actor gives for an outcome, that are important to future achievement behavior.

The achievement attribution theory has been developed to a number of areas, and has also provided a basis for much research into the development of children's attribution processes. The interested reader is referred to the Appendix, in which summaries of several review articles concerning attribution theory and developmental research are presented.

The purpose of this bibliography is to examine research about handicapped and ethnic minority children which the achievement attribution model has generated and to apply that research to the LEP handicapped child. In looking only at the achievement attribution theory, we (the authors) are aware that we are excluding other important theories of motivation (for example, reinforcement theory, McClelland's achievement motivation theory, etc.) and are not considering a number of other variables which may be important in determining children's achievement attitudes and behavior (e.g., cognitive style, learning style, etc.). We emphasize that these limitations represent time and space considerations rather than a rejection of the value of any of these theories or variables. It is our hope that others involved in research about and education of LEP handicapped children will continue to explore these areas along with areas such as attribution.

Additionally, however, our focus on achievement attribution theory reflects our belief that this theory can provide useful insights for understanding and working with LEP handicapped children. Besides providing a

framework for describing a child's motivational tendencies and examining how they might be established, research in the area of attribution retraining suggests that attributions can be altered so that attitudes toward further achievement are enhanced. Given that handicapped (and very probably LEP handicapped) children are often described as having "poor attitudes", the attribution approach (and attribution retraining) might offer new ways to more successfully work with these populations.

The works selected for annotation in this paper center on several main areas. The first is the application of attribution theory to special populations. The second is research which describes the attribution patterns of handicapped children, and compares these patterns to those of nonhandicapped children. A third section presents studies which examine situational influences on handicapped children's attributions, and a fourth examines the interactions of children's attributions and instruction. Finally, studies of attribution retraining are presented, and a concluding section considers how findings from all sections may relate to the LEP handicapped child. Further information about each section is provided in section introductions. However, several general comments about attribution theory and research may be useful in setting the stage for all sections which follow.

First, while the effects of a handicapping condition and the effects of ethnic group membership on attributions have both been considered by at least one study, these two variables have not been considered jointly. Therefore, the findings about attributional causes, dimensions and styles based on handicapped populations which are reported here may or may not apply to the LEP handicapped child. Future research which considers this population per se will be needed to ascertain whether this group has unique attributional

patterns and whether these patterns have implications for attribution retraining.

Second, a gap appears to exist between attribution theory and research at the present time. Although attribution theory stresses the importance of the dimensions of a causal attribution (i.e., the qualities of internality-externality, stability and controllability that were described above), most attribution research focuses on the stated reason for an outcome. The majority of studies ask children to describe outcomes in terms of only four major causes: ability, effort, luck and task difficulty. Those studies which have considered the dimensions which underly stated causes have usually considered only one or two dimensions rather than the three which current conceptualizations of the achievement attribution theory suggest, and tend to omit the controllability dimension. Future research will therefore be needed to determine whether children's perceptions of uncontrollability differentiate handicapped and nonhandicapped populations, and whether changes in children's perceptions of this dimension are of importance in attribution retraining.

The reader is also advised to carefully note descriptions of subject populations as studies are reviewed. Studies of both the attribution process and of attribution retraining have considered several different populations, who may or may not share the same attribution-making processes. Some studies have focused on labeled and nonlabeled children, some have focused on children who would receive a learning disability label if services were available in their school, some have focused on low achievers, and some have focused on children who did or did not feel personal responsibility for academic outcomes ("helpless" and "mastery-oriented" children) without regard to children's level of academic achievement. These groups differ among themselves, and may differ greatly from LEP handicapped populations. In addition, subject

populations vary in age. If the way in which children perceive causes depends upon their age and level of cognitive development, results from one age group may not be descriptive of another.

Finally, the studies presented here differ greatly in their methodology and statistical approach. Some researchers have chosen to work with small groups and a large number of measures (and to incorporate a mainly qualitative approach) while others have used larger sample sizes and complex multivariate statistical techniques. Differences also exist in the way children's attributions have been assessed, with some studies using forced-choice questionnaires and other closed-ended assessment techniques, while others have used more open-ended assessments and response coding systems. Additionally, attribution retraining studies have used a variety of approaches in attempting to alter children's attribution patterns. These approaches vary along important dimensions such as the directnesss of training presentation (subjects are either given tasks directly related to attribution retraining or retraining is made a part of a content curriculum), the size of the group trained (individual, small group or whole class), and others. Taken together, these differences make for an interesting and probably better rounded picture of children's attribution processes and how they might be changed than would the consistent use of any one approach. However, these differences in attribution measures, subjects and methods also influence results, and may help to explain some of the contradictions in attribution patterns and in attribution retraining outcomes, which will be noted across the studies presented in this bibliography.

1. Attribution Theory, Learned Helplessness, and the Handicapped Child

As the achievement attribution theory has gained wider acceptance, its applicability to a variety of populations has been explored. Educators and psychologists involved with handicapped students have considered the attribution theory process in relation to special populations. Learned helplessness, which has been defined as a decrease in persistence due to an individual's belief that his/her efforts do not affect outcome, has also been examined as a possible explanation for the "poor work habits" which handicapped students often have.

This section presents four works which consider how theoretical conceptions of the attribution process and learned helplessness might help to explain and to remediate the behavior of learning disabled children. All four authors agree on several important points. First, they conclude that the attribution processes of the handicapped child have probably been influenced by the child's handicapping condition. Second, they find that the learned helplessness model is useful in explaining the behavior of handicapped (and especially learning disabled [LD]) children. Finally, they agree that the child's attribution processes should be considered in educational programming, and hypothesize that working to change the "helpless" attribution patterns of LD children can facilitate educational progress. While none of these papers address the unique characteristics of the handicapped language minority student, they provide an interesting framework on which to base research about and interventions for LD and other handicapped children.

Thomas, A. (1979). Learned helplessness and expectancy factors: Implications for research in learning disabilities. Review of Educational Research, 49(2), 208-221.

Thomas begins by pointing out that in recent years, the emotional significance of learning disabilities has begun to receive consideration. She therefore states that her paper has two main purposes: (a) to review the research on the effects of extensive failure experiences, and (b) to discuss implications of this research for learning disabled populations.

Thomas explains that the effects of success and failure have been studied from several perspectives. These include learned helplessness, attribution theory and cognitive-social learning. She notes that recent research has increasingly taken an interactionist approach, in which the effects of both internal perceptions and external events on learning outcomes are considered.

Thomas first reviews literature concerning learned helplessness. Learned helplessness is defined as "a phenomenon by which an individual learns, over a series of trials, that she/he has no control over the outcome of events" (p. 209). The result of this learning is passivity and a decrease in persistence. Thomas notes that this description of the learned helpless individual is very similar to the descriptions of LD children given by special education teachers. The research Thomas reviews suggests that two variables are critical to the development of learned helplessness: an uncontrollable outcome and experience with failure. However, research with adults which incorporated these variables led to inconsistencies, in that noncontingent failure sometimes led to increased learning rather than helplessness. This led to the consideration of the role of individual cognitions in the development of helplessness.

Thomas describes three distinct research strategies associated with attribution research. The first uses pencil and paper tasks or hypothetical situations to identify types of causal judgments and individual differences associated with them; the second assesses performance when expectancy is experimentally manipulated, and the third incorporates both rating and behavior measures.

The "rating" or judgement dimension approach has been used to explore internal-external locus of control and children's attributions for academic performance. Using this approach, Weiner and others have developed a three-dimensional model of causal attribution. These dimensions are internality-externality, stability-instability and an intentionality factor. Thomas notes that the stability factor is of importance in the study of learned helplessness in that learned helplessness will only occur if repeated failure is attributed to a stable cause (such as ability), rather than an unstable one (such as luck).

In reviewing studies which have examined how people explain achievements, Thomas finds that the importance given to effort increases with age. However, whether this pattern (and other attribution patterns suggested for adult subjects) holds for LD children has not been investigated as yet.

Thomas notes that the correlation between causal judgements (attributions) and behavior is not a perfect one. Keeping this in mind, she suggests several relationships between attributions and behaviors that are consistent over several studies. These are: (a) Individuals who attribute outcomes to effort are likely to work harder and longer than those who attribute outcomes to ability; (b) to the extent that individuals attribute failure to ability, they are likely to be less persistent; and (c) the transfer of learned helplessness to a new task may be mediated by attributional cues contained in instructions. For example, if all tasks have been described as "easy" and failure is experienced, the failure may be attributed to ability and learned helplessness will result. If, however, tasks are described as "varying in difficulty," failure may produce attributions to the task itself (an unstable variable), and each task will produce new effort. Thomas further describes two patterns based on research with children: (a) The less persistent children are at a task, the greater the tendency to take less responsibility for its outcome, and (b) to the extent that they do take responsibility, less persistent children tend to attribute outcomes to ability rather than effort.

Thomas next reviews studies which have attempted to counteract learned helplessness by changing attributions. While she finds results that suggest maladaptive attributions can be changed, she notes methodological flaws. Studies have developed ad hoc measures which do not measure all three dimensions of attributions, have not used clearly defined populations, and have mainly been limited to a lab type setting. A need for more carefully planned studies with LD children still exists.

Thomas concludes by making suggestions for further research. She advocates a developmental cognitive-functional approach, which would have two phases. In phase one, comprehensive attribution measures for LD children would be developed by synthesizing and validating previous work. In phase two, emphasis would be on intervention, including how best to use instructional materials and personnel, and how best to match attribution intervention to the LD child's learning history.

This article is interesting in that it brings together several areas of research and applies them to LD populations. While the six years since it was written have seen some of Thomas's ideas for research carried out with limited LD samples, there is still a need to consider how a bicultural background might interact with attribution patterns and the possible development of learned helplessness in LEP handicapped populations.

Canino, F. J. (1981). Learned-helplessness theory: Implications for research in learning disabilities. The Journal of Special Education, 15, 471-484.

In this position paper and literature review, Canino summarizes studies of learned helplessness in achievement situations, and proposes a model which incorporates the concept of learned helplessness into learning disability theory and research.

Canino begins by noting that studies of learning disabled students' perceptions, expectations, attributions and strategies in academic situations to date have been limited. He suggests that studies of learned helplessness may help to describe these processes for learning disabled students.

Canino reviews early work which described the phenomenon of learned helplessness in animals, and presents inconsistent results obtained from human studies which have caused reformulation of the learned helplessness hypothesis. He notes that learned helplessness theory has been joined with attribution theory (as described by Weiner, 1979; annotated in Appendix) to explain why some people respond to failure with performance deficits while others do not, and describes a dimension of attributions (globality; general-specific) which learned helplessness researchers have added to other attributional dimensions. He suggests that if the uncontrollability of an outcome is seen as global, helplessness will result, whereas perception of the uncontrollable outcome as situation specific will allay the tendency toward performance decrement (learned helplessness) in the face of failure.

Canino next reviews attribution research as it has been applied to achievement situations. He first considers studies which have examined gender differences and reaches three conclusions: (a) Children who attribute failure to a controllable factor (such as effort) work harder and longer than children who make attributions to uncontrollable factors (such as ability) regardless of gender; (b) helpless learners tend to attribute failure to lack of ability rather than to lack of effort, and this attribution is more characteristic of girls than of boys; and (c) results are consistent with the reformulated learned helplessness hypothesis that performance and affect can be impaired by negative self-attribution.

Canino next examines mediating variables in the achievement situation, i.e., variables which facilitate or work against the development of academic helplessness. He finds that the development of helplessness is most likely when authority figures punish the occurrence and nonoccurrence of misbehavior with equal probability (noncontingently) leading to a perception of response-outcome independence and development of maladaptive attributions. Together, these factors produce poor achievement. In addition, children who receive only solution-specific feedback become more likely to interpret criticism as meaning that they lack ability. Criticism which directly mentions uncontrollable factors (such as lack of ability) is very likely to foster the development of helplessness.

Canino briefly reviews research which has examined differences in the way that mastery-oriented and helpless children process information in academic settings. He states that the groups differ in attribution style, pattern of performance and nature of verbalizations following failure. He notes that little is known about how well these patterns of information processing actually describe the learning disabled child, and finds existing research to be limited and contradictory.

Canino goes on to consider treatment approaches which have been applied to the alleviation of academic helplessness. He suggests that treatment should be matched to attributions; for example, if helplessness is the result

of external-variable attributions (for example, attributions to luck) providing response dependent success in the form of positive reinforcement may be therapeutic. However, if helplessness is the result of internal-stable attributions, (for example, attributions to ability) simple reinforcement will not change expectancies and therefore will not alleviate helplessness. In this case, the maladaptive beliefs themselves must be challenged.

Canino summarizes retraining research by suggesting that a cognitive-functional approach (such as cognitive behavior modification) seems to offer the best likelihood of ending helplessness. He states that attribution training alone or in conjunction with reinforcement procedures appears to be superior to reinforcement procedures only, and suggests that a critical element of retraining is teaching the child how to cope with failure. He states that the purpose of attribution retraining should be twofold. First, it should teach a child to understand the origins of failure (rather than presenting a false picture of ability) and second, it should teach the student to modify what he/she says about failure so that evaluative feedback to a student is interpreted from a motivational view (i.e., so that a student sees negative feedback as a call to effort rather than substantiation of lack of ability). He proposes three areas for future research: the durability and generalization of new attribution patterns following retraining, the examination of how attribution patterns change across situations such as different classrooms, teachers, or years in school, and the development of instructional procedures for teachers.

Canino concludes by reiterating the similarities between learned helpless and learning disabled children and suggests that the helplessness paradigm should be applied to learning disabilities. He states that the paradigm offers a framework for understanding how some students interpret achievement outcomes.

This is a key article in that it summarizes a great deal of attribution research. All suggestions for future research are applicable to the LEP handicapped child, and it would seem particularly important to develop Canino's idea that training be matched to children's attributional patterns for this and other populations.

Grimes, L. (1981). Learned helplessness and attribution theory: Redefining children's learning problems. Learning Disability Quarterly, 4, 91-100.

This article explores attribution theory and the concept of learned helplessness in teaching learning disabled individuals, and proposes that a cognitive behavior modification approach should be used in attribution retraining.

Grimes begins by suggesting that what teachers have called the "motivational problems" of children who do not persist when confronted with failure may in fact have to do with children's attribution patterns. She uses a flow chart to describe how events and the attributions children make about them can lead to effortful behavior on the part of high achievers but to a

lack of incentive for effort for low achievers. She further suggests that the concept of learned helplessness is useful in explaining high and low achievers' differing reactions to success and failure.

In reviewing research on attributions of learning disabled children, Grimes cites studies which suggest that LD children's attributions are more external than non-handicapped children's. She notes, however, that some external attributions may be realistic for handicapped children, and suggests that educational professionals should help to interpret to children, parents and teachers what factors about a child are fixed and what factors the child can control. The LD child must be helped to see that while his ability cannot be changed, his effort and time spent learning are controllable.

Grimes proposes the use of cognitive therapy as a tool to teach children to cope with failure situations. The author states that researchers in the field of mental retardation and learning disabilities have indicated that inefficient learners may be characterized not by poor memory and/or lack of ability but by inefficient strategies for discriminating, organizing, storing, and retrieving information. These children perceive a situation and act immediately rather than working with the problem. With cognitive behavior modification, the individual is taught to develop inner language to help define the problem, choose a problem-solving strategy, and rehearse the answer. Grimes mentions the summarized steps that teachers might use in teaching children self-instructional sdrategies to deal with failure situations, such as: (a) inhibiting impulsive responding, "I'd better slow down here"; (b) attending only to the relevant cues of the task, "Now let's see, what is really important here?"; (c) picking out task goals, "What am I supposed to do?"; (d) coping with frustration, "I'll try a different way to figure it out"; (e) using appropriate attribution statements for task persistence, "I'll get it if I just keep trying"; (f) using critical feedback, "This doesn't seem right here, what's wrong?"; (g) reinforcing self-control responses, "There, I'm taking it slow and figuring it out"; and (h) using self-reinforcement for task completion, "Yeah, I got it finished." The child rehearses these strategies of inner speech until he/she develops his/her own set of self-instructions. According to the author, researchers have theorized that inner language may enable the individual to provide himself with correctional feedback and self-reinforcement.

Grimes states that defining "motivation problems" as attribution problems suggests a number of areas for special education research. These include: how "myths" about school subjects may affect learned helplessness, how teacher feedback influences attributions, an examination of children's coping processes, how knowledge of educational labels affects attributions, the exploration of other situations in which a handicapped child may display learned helplessness and how "failure innoculation" techniques can be used to teach children to deal with failure.

Grimes also states that the effects of current educational practices and teaching strategies on attributions should be considered. She discusses current teaching techniques which may either foster student motivation and self control (e.g., realistic teacher expectations, teaching self-instructional strategies of inner speech, etc.), or student dependency and failure (e.g., norm-referenced evaluations and grading based on peer

comparisons, use of labels, etc.). Grimes concludes by stating that the ultimate goal for all teachers should be to program environments, instructional materials, and teaching techniques to help children internalize efficient self-propelling strategies.

This is a well-written article, which proposes an innovative strategy (cognitive behavior modification) as a component of attribution retraining. This strategy, along with other practices such as using failure experiences along with success experiences, can be used to help LEP handicapped children who might need attribution retraining. The list of teaching strategies that might be related to students' motivation should also be taken into account when teaching this population, although the relationship between these strategies and motivation has not been empirically tested.

McDonnell, T. E. (1983). Attribution theory and school social work. Social Work in Education, 5(2), 97-108.

In this review of the literature, McDonnell makes suggestions about how school social workers can apply attribution theory and attribution research findings to their work with special education students.

McDonnell begins by noting that P.L. 94-142 has changed the role of some school social workers, so that they spend more time as members of multidisciplinary teams than as home visitors. He suggests that attribution theory can help social workers in this setting, especially when they work with educably mentally retarded (EMR) and learning disabled (LD) students.

McDonnell states that attribution theory "is concerned with how people attribute the outcomes of their behavior, whether successful or unsuccessful, to causes within themselves or to something outside of themselves" (p. 97). He reviews dimensions of attributions which have been suggested by Weiner and others including internality-externality and stability-instability, and notes that "if success is not ascribed to internal causes, then positive reinforcement is ineffective in strengthening that particular behavior" (p.99).

McDonnell first applies his description of attribution theory to the EMR student. He suggests that educational personnel may explain EMR students' low academic performance using an internal and stable cause (ability). If this is communicated to EMR students, they will reduce their own expectations of success, and succeed less. When the student does well, others may explain success in terms of effort or instruction, i.e., attribute the success to an unstable, and possibly even to an external cause. The EMR student is taught to attribute failure to stable causes within himself and to attribute success to unstable or external causes, or, more simply, to claim responsibililty for failure but not for success. Teachers may also undermine the student's chances to learn to relate effort and success by rewarding success in too easy tasks in order to avoid frustration on the part of the student. This causes the student to adopt a "failure avoiding" rather than a "success striving" (effortful) orientation.

McDonnell cites research which suggests that experiences in the mainstream classroom can help EMR students to develop more internal control than self-contained classroom students. There are also indications that mainstreamed students have a more positive attitude toward school, and improve their concept of their own ability.

McDonnell suggests that many of the attribution research findings that concern EMR students may also apply to LD children. He suggests that since these children are of normal ability, teachers may imply that their poor performance is caused by a lack of effort and treat them accordingly. He also finds that the same dynamics that work to teach the EMR student to take credit for failure but not for succcess may apply to the LD student.

The author suggests that by using attribution research findings, school social workers will be able to make suggestions to teachers and parents about how to give feedback to LD and EMR students via the student's Individualized Educational Plan (IEP). He suggests that proper feedback can assist in the alleviation of learned helplessness, a phenomenon often associated with the LD child.

McDonnell also suggests that attribution related findings can help in the planning of behavior modification programs, which are often a part of an IEP. He states that in order for a behavior program to be successful, it must lead to an expectancy of success that will cause the child to expend effort to get reinforcement. If the child thinks that reinforcement comes only as the result of stable factors (such as ability), he will not try and the program will fail. If, however, the child thinks that reinforcement comes as a result of unstable factors (such as effort), then the program can succeed. It is therefore important for behavior modification programs to consider children's attribution patterns.

Overall, McDonnell suggests that school social workers should use attribution findings in two major ways. First, he points out that attributions, like all beliefs, are amenable to cognitive restructuring. Therefore, social workers can provide guidance to teachers and parents about what types of feedback will facilitate the most adaptive attributions. In addition, the social worker can assist in making sure that the child's attributional patterns are considered when the IEP is formulated by encouraging school psychologists and counselors to become familiar with ways to assess children's attributions.

This article is intended for an applied audience, and therefore does not present research material in depth. It is interesting, however, in that it suggests teacher attitudes and classroom practices which may shape special education students' patterns of attribution. It would be interesting to know if these patterns are also present and have the same effects for LEP handicapped students.

2. Attribution Patterns of Handicapped and Ethnic Minority Children

The articles annotated in the previous section suggest that relationships exist between certain characteristics (such as a learning disability) and children's patterns of attribution making. This section presents studies which have explored these relationships empirically.

Studies conducted to date have considered attribution patterns under both success and failure conditions for three main groups of children: (a) learned helplessness, as opposed to mastery-oriented, students (Dweck & Repucci, 1973; Diener & Dweck, 1978; Diener & Dweck, 1980; and Swindler & Diener, 1983); (b) learning disabled, as opposed to non-labeled, students (Pearl, Bryan & Donahue, 1980; Pearl, 1982; Tollefson, Tracy, Johnsen, Buenning, Farmer & Barke, 1982; and Hill & Hill, 1982); and (c) ethnic minority, as opposed to Anglo, junior high students (Willig, Harnisch, Hill & Maehr, 1983). All studies have revealed differences between groups along several dimensions. For example, learned helpless and learning disabled children have been found to attribute academic outcomes to external causes (such as luck) more frequently than do mastery-oriented and non-labeled children. As in the previous set of annotations, however, the handicapped language minority child has not been specifically considered in any available research.

Dweck, C. S., & Repucci, N. D. (1973). Learned helplessness and reinforcement responsibility in children. Journal of Personality and Social Psychology, 25, 109-116.

This study examined two questions. The first was whether children would experience deterioration of performance similar to that described in learned helplessness research in an achievement situation if exposed to a noncontingent aversive event (failure). The second concerned what factors differentiated children who showed performance deficits from children who did not. It was hypothesized that performance deficits would be observed for some children, and that children who persisted would take more responsibility for

success and failure and attribute success to effort more than children who did not persist.

Subjects were 20 female and 20 male fifth-grade students. All subjects completed the Intellectual Achievement Responsibility (IAR) Scale and participated in an experimental task which consisted of a series of individually administered block design problems. Problems were presented by two experimenters, one of whom always presented solvable designs and one of whom always presented unsolvable ones. Subjects were cued by a light box as to which experimenter would present the next problem, and were asked to predict how well they would do on the problem after seeing the cue.

Problems were presented as follows: 20 "training" problems (10 from each experimenter) were presented in random order and followed by 2 "test" problems from the failure experimenter and 2 "probe" problems from the success experimenter. Test problems were solvable and were used to gauge the effect of presentation by the failure experimenter. Probe problems were also solvable and were used to check for the effects of fatigue and/or practice on performance (i.e., to provide comparison data for the failure experimeter's test problems). Following the first test and probe problems, 36 more randomly ordered training problems were presented and followed by 2 probe and 2 test problems.

A preliminary analysis of covariance which controlled for practice effects showed that children took significantly longer to complete the (solvable) test problems presented by the failure experimenter than they did to complete the solvable (probe) problems presented by the success experimenter. This deficit occurred even though children had shortly before solved almost identical problems from the success experimenter, and continue to perform well on success experimenter problems.

Children were then divided into four groups (helpless males, helpless females, persistent males and persistent females) on the bases of sex and a median split of the discrepancy between the time needed to solve test problems from the success experimenter and probe problems from the failure experimenter with practice effects controlled; i.e., those subjects who failed to solve solvable problems from the failure experimenter or who showed the greatest increase in time to solution were placed in the helpless group. Nearly half of the helpless group was found to have failed at least one of the failure experimenter's test problems, even though they had solved the same problem (rotated at a different angle) when it was presented by the success experimenter. Helpless children also took more time than persistent children to solve the failure experimenter's solvable test problems, even though their times on the success experimenter's solvable probe problems were similar to persistent children's.

Analysis of subjects' stated expectancy of success (obtained before each trial) showed no differences among groups. Initial expectancies, final expectancies and shifts in expectancy following success or failure were all found to be similar across groups.

Differences in reinforcement responsibility, as measured by the IAR, were found for helpless and persistent subjects. Analyses of variance showed that persistent students took more personal responsibility for outcomes. This difference was found for total IAR score, for items dealing with success outcomes and for items dealing with failure outcomes. Attributions to ability for success outcomes did not differ across groups, but persistent subjects more often attributed success to effort than did helpless ones. Similarly, attributions to ability for failure did not differ across groups, but males and persisters were significantly more likely to attribute failure to lack of effort.

The authors suggest that their results are consistent with a learned helplessness model, and that they support the importance of children's attributions in explaining performance deficits. They suggest two implications of their findings. First, if expectancies can be brought under stimulus control (as was apparently done with experimenter and light cues in this study) it might facilitate the transfer of expectancies from a training situation to other situations. Second, these results suggest that the possibility of training greater reinforcement responsibility should be considered.

This study presents some of the first evidence for the applicability of learned helplessness to children, and first suggests the possibility of attribution retraining. Since no study involving handicapped LEP children which is comparable to this one has yet been undertaken, it might be considered as a model for beginning research with this population.

Diener, C. I., & Deck, C. S. (1978). An analysis of learned helplessness: Continuous changes in performance, strategy, and achievement cognitions following failure. Journal of Personality and Social Psychology, 36, 451-462.

Previous studies (Dweck & Repucci, 1973; Dweck, 1975; annotated elsewhere) have suggested that learned helpless and mastery-oriented children respond to academic experiences in different ways. The two studies reported in this article were designed to further explore the differences between helpless and mastery-oriented children's performance following failure. Of specific interest were the hypothesis-testing strategies that both groups of children would use, and the verbalizations that would be made during a failure experience. It was hypothesized that differences between the two groups would exist.

Subjects for Study 1 were 67 fifth-graders (34 males and 33 females); subjects for Study 2 were 60 additional fifth-graders (30 males and 30 females). Both sets of subjects were divided into two groups (helpless and mastery-oriented) based on scores from effort items on the Intellectual Achievement Responsibility Scale (IAR). Subjects participated in a problem solving task in which each "problem" was a series of sets of two figures which varied in color (red or blue), form (square or triangle) and center symbol (star or circle). Subjects were to find the one "right" dimension among the six possible. Stimulus cards were arranged so that any hypothesis being

tested by the child could be "followed" by looking at response choices; for example, the child's responses could be examined to determine if he/she switched from a consistent guess of "red" to a consistent guess of "blue". Instructions stated that the answer was a color, shape or center shape in order to eliminate position or hypotheses.

Both helpless and mastery-oriented children were given sets of training problems which were repeated until children identified the correct dimension. They were also introduced to a no feedback procedure in which the experimenter made no response to some answers. No feedback trials were included to assist in identifying what hypothesis subjects were testing on a given trial. Practice trials were continued until it appeared that the child understood all procedures.

Four test problems were then presented. These sets of figures (which actually had no correct answer) were presented only once, so that children could not test all possible hypotheses. All feedback for these problems consisted of "wrong". Following the last problem, all children were asked why they had trouble with the final four problems. Their attributions were later coded by an independent rater.

In Study 2, one procedural modification was made. The same basic procedures used for Study 1 were repeated, but children were also asked to "think out loud" as they solved the test problems. They were encouraged to say whatever came into their minds, whether it had to do with the problem they were solving or not.

Problem solving hypotheses used by subjects were classified using a previously developed scoring system. Hypotheses were classified as useful (strategies which would eventually lead to solution, such as dimension checking or hypothesis checking) or as stereotypes (strategies which could never lead to solution, such as always picking the figure on the right). Nine verbalizaion categories were also developed. These included: (a) statements of useful strategy (statements of a plan that would lead to problem solution), (b) statements of ineffectual approach statements that ignored feedback and/or would not lead to problem solution, (c) attributions (reasons for success or failure), (d) self-instructions (statements that would improve performace, such as "think" or "slowdown", (e) self-monitoring (statements that described effort or concentration), (f) statements of positive affect (statements indicating that the task was challenging and/or enjoyable) (g) statements of negative affect (statements of boredom, anxiety or a wish to end the task), (h) positive prognostic statements (statements which indicated expectancy of task success), and (i) solution-irrelevant statements (verbalizations which did not concern the discrimination task). Verbalizations were coded by independent raters who achieved a reliability of 89%.

Analysis focused on between-group differences in attributions, hypothesis strategies and verbalizations. Results for attributions concerning failure problems for Study 1 showed differences. Over half of the helpless children attributed their failure to lack of ability, while none of the mastery-oriented children did. Mastery-oriented children favored effort, luck, fairness of the experimenter and increased task difficulty as reasons for their failure.

Analyses of before-failure performance measures (number of trials needed to solution, number of experimenter hints needed, and types of strategies used in training problems) showed no differences between groups. However, ANOVAS performed on post failure performance data showed that helpless children used ineffectual hypotheses more often than did mastery-oriented children. No gender differences were found, and these results were obtained for both Study 1 and Study 2 data. Chi square analyses of strategy changes after failure (which included improved, stayed the same, and deteriorated categories) yielded significant between group differences. Following failure, mastery-oriented children improved their strategy; helpless children allowed their strategy to deteriorate.

Chi square analysis of verbalization categories from Study 2 also showed significant group differences. During "test" (failure) problems, helpless children tended to make ineffectual strategy statements, attributions to loss of ability, statements of negative affect and solution irrelevant statements, while mastery-oriented children made self-instruction, self-monitoring, positive affect and positive prognosis statements.

The authors describe the differences in the post-failure performance patterns of the the two groups as "striking". They note that helpless children tend to think of the cause of failure, while mastery-oriented children seek a remedy. They suggest that attribution retraining might therefore incorporate procedures which aid helpless children in learning to control task-irrelevant cognitions and in learning to self-instruct and monitor. They conclude by noting that while past research has assumed that individuals differ mainly in the content of their attributions, these results suggest that the timing of attribution-making may differ as well. Helpless children in these studies were found to be making attributions for failure before mastery-oriented children considered the task complete.

This study is of interest in that it further confirms and more fully describes the differences between helpless and mastery-oriented children. Perhaps the most interesting thing to be derived from it, in considering the LEP handicapped child, is its method of examining hypotheses and verbalizations made during a problem solving task. If a similar study could be conducted with LEP handicapped children, it might add to both attribution/learned helplessness and first and second language literature by answering questions about the language in which LEP children can best monitor themselves and maintain positive self-talk.

Diener, C. I., & Dweck, C. S. (1980). An analysis of learned helplessness: II. The process of success. Journal of Personality and Social Psychology, 39, 940-952.

The authors begin by suggesting that the majority of previous research about the learned helpless child has concentrated on cognitions about failure. The present study sought to examine strategy testing and affective cognitions about success both after succcess and after failure. The study is an extension of previous work by the same researchers (Diener & Dweck 1978; annotated elsewhere).

Subjects were 112 (56 male, 56 female) fourth, fifth and sixth graders. Approximately one-third of the sample was Black; the rest was Anglo. Subjects were divided into two groups (helpless and mastery-oriented) based on scores on effort items of the Intellectual Achievement Responsibility Scale (IAR).

Subjects completed 12 discrimination problems in which they were to ascertain the dimension that made an answer "right" by making guesses over series of trials. Each trial stimulus contained two figures which varied in color (red or blue), shape (square or tringle) and center symbol (circle or star). Each problem contained four cards which were arranged so that the hypothesis the child was testing could be ascertained. "Blank" trials in which no feedback was given were incorporated to further aid in the determination of children's hypotheses.

Children were first given eight success problems which were presented until the correct solution was reached. Following these eight success problems, half of the subjects (including equal numbers of boys and girls, helpless and mastery-oriented children), were asked to evaluate their performance (using a 1 to 10 scale), to evaluate how well they thought other children their age would do (using the same scale), to guess how many problems of the next 15 they would get right, to recall how many problems they had gotten right so far, and to make attributions for their success using an attribution wheel which allowed for attributions to luck, task difficulty, task aptitude or general ability. An attribution to effort was not included since the task clearly required effort, and it was undesirable to allow this obvious attribution to overshadow others.

Following the eight success problems and questions for half the subjects, four failure problems were presented. These problems were presented only once (while success problems were presented until the solution was reached) and all feedback consisted of "wrong." The procedure used for these problems let children search for a solution, but did not allow them to examine all possible answers. Since failure problems in fact had no "correct" answer, they were unsolvable given the testing conditions, but were "not obviously so" (p. 945).

After the failure trials, retrospective impressions of the success problems were obtained from all children, i.e., some children were questioned after success and failure while some were questioned after failure only. The same data gathered above (performance rating for self, performance rating for others, future expectancy, recall of number correct and attributions) were collected. Additionally, children were shown the first problems and asked if they could still solve them.

Children's hypotheses for all problems were classified as useful (having the potential to lead to problem solution) or ineffective (not having this potential), and were further classified into several subsets within these broad categories. Scoring criteria were the same as those for the previous study (Diener & Dweck, 1978).

Initial data analyses focused on the performance of helpless and mastery-oriented children during success trials. Analyses of number of hints

needed, number of trials needed and effectiveness of hypothesis testing showed no between-group differences.

Under failure conditions, however, results showed that helpless children used more ineffective strategies than mastery-oriented children. Effectiveness of strategy was negatively correlated to responsibility or outcome as measured by the IAR, i.e., the less reinforcement responsibility the child showed, the less effective his/her strategy. Chi square analysis showed that mastery-oriented children were likely to improve their strategy under failure conditions while helpless childrens' strategies were likely to deteriorate.

Perceptions of success were analyzed using a 2 (group) by 2 (sex) by 2 (race) by 2 (time of questioning; after success or failure) MANOVA for all dependent variables. Results showed that helpless children responded to questions differently than mastery-oriented cildren did; race, sex, and time of questioning effects were not significant.

Follow-up analyses compared the perceptions of success of children who had experienced success only, to those who had experienced success and failure (i.e., post-failure answers of children who were questioned twice were excluded). Differences were compared for helpless and for mastery-oriented children. Following success, helpless and mastery-oriented children rated their performance equally. However, the groups differed significantly in expectancy of future success, the number of problems they expected to get right out of the next 15, and how well they believed other children would do. Helpless children expected less future success and thought others would do better than did mastery-oriented children. Helpless children also reported fewer correctly solved problems, and were less accurate about the actual number of problems they had gotten right than were mastery-oriented children. Following failure, these differences were maintained. In addition, helpless children's ratings of their earlier performance were also significantly lower than mastery-oriented children's ratings.

Attributions also differed for the two groups. Following success, mastery-oriented childen made significantly more attributions to effort than helpless children and following failure, helpless children attributed their success more to task ease than did mastery-oriented children. Helpless children overestimated the number of problems they had failed, while mastery-oriented children did not, and mastery-oriented children believed they could solve the success problems if they were presented again, while helpless children did not.

Previous research has suggested that repeated assessment of expectancies changes both children's stated expectancies and task performance. Therefore, a final set of analyses examined the effects of repeated questioning, using data for those subjects questioned both after success and after failure. A second 2 (group: helpless or mastery-oriented) x 2 (sex) x 2 (race) x 2 (questions asked once or twice) MANOVA showed significant effects for group and questioning; race and sex effects were not significant. No significant interactions are reported. Follow-up analyses revealed that children who were questioned twice expected less future success and rated their performance during success trials less positively than did children questioned once, i.e.,

results suggest that repeated questioning resulted in the child revising his/her responses to reflect failure to a greater degree. The authors hypothesize that the post-success questions increased the salience of the subsequent failures.

This study is interesting in that it considers race as a variable in attribution making. While no significant effects for this variable were found, it would be interesting to see if this result would be replicated for different age groups and/or for Hispanic, LEP and LEP handicapped children.

Swidler, P. J. & Diener, C. I. (May, 1983). Learned helplessness: An analysis of failure avoidance through maladaptive overpersistence. Paper presented at the Annual Meeting of the Midwestern Psychological Association, Chicago. (ERIC Document Reproduction Service Number ED 237 207)

Previous studies of learned helpless children have suggested that there is a need to encourage these children to greater effort. These authors suggest, however, that the learned helplessness problem and its "cure" are more complex in that some helpless children already engage in effortful behavior.

This study was conducted to determine whether there exists a group of overpersisting children who are considered mastery oriented because of their persistence, but who actually demonstrate characteristics of learned helpless children.

Using previous research, the authors identify five characteristics of learned helpless children: (a) decreased persistence in the face of difficulty, (b) attribution for failure to a lack of ability, (c) attributions for success to external factors, (d) low expectancy of future success, and (e) avoidance of moderately difficult tasks which may evaluate their true level of ability. They hypothesize that the last three of these characteristics will be seen in helpless overpersisters, whom they describe as suffering from "the Nixon syndrome—unusually prolonged persistence designed to forestall the admission of failure" (p. 8). They further hypothesize that unlike learned helpless children, "Nixons" will attribute failure to external causes.

Subjects were 71 females and 84 males in grades 4, 5, and 6. Their scores on the Intellectual Achievement Responsibility Scale effort items were used to form mastery oriented and helpless groups. Subjects participated in four experimental tasks. The first, an angle matching task, incorporated success and failure trials and was used to determine subjects' attributions to luck, ability, effort and task difficulty for success and failure. Subjects were also asked to estimate how well they would do on a similar task the next day, giving a measure of their expectancy of success. The second task, two puzzles, provided a measure of persistence. Children were allowed as much time as they wanted to work on a nearly impossible puzzle before they went on to a second (solvable) puzzle. Verbalizations during the time the child worked on the first puzzle were recorded. The third task assessed the level of task difficulty children preferred. After working on one page each of

three-, five- and eight-letter anagrams, subjects were allowed to choose the length of anagrams for a final page, and were asked how well they thought they would do on the set of anagrams chosen. Finally, children were given an easy set of word search puzzles, and asked to attribute their performance to luck, ability, effort or task difficulty.

Preliminary results showed that mastery-oriented children made fewer failure attributions to task difficulty and fewer success attributions to luck than did helpless children. No significant sex differences were found. Minority children made fewer success attributions to ability on the IAR and chose fewer three-letter anagrams than did nonminorities. The authors do not specify the number of racial/ethnic characteristics of their minority subjects.

Results also confirmed the existence of "Nixon syndrome" children. These children were in the top third on the persistence (puzzle time) ranking scale, but showed low expectancy for future success, avoidance of moderately easy (five-letter) anagrams and success attributions to external factors. "Nixons" were also found to have written significantly more nonsense words on the anagram pages (presumably to cover up their failures), and differed from other mastery-oriented children in their verbalizations during puzzle anagram tasks. Verbalizations were coded for attributional content (no reliability for the procedure is given). "Nixons" made no ability attributions for failure, while mastery-oriented and helpless children did. Rather, "Nixons" attributed failure on the puzzle or anagrams to task difficulty.

The authors conclude that there is such a thing as helpless persistence. They also note that "Nixon syndrome" childrens' efforts did not include effective strategy changing, while those of mastery-oriented children did. They tentatively conclude that "Nixon" syndrome children are a subgroup of learned helpless children. They note implications for schooling and suggest that teachers should be warned against simply reinforcing persistence.

These results appear to have implications for attribution retraining. It is probably not enough to just teach "effort" if this results in children who refuse to abandon a task when they should, or refuse to ask for teacher help for fear of looking like they are "not trying." Licht (1983; annotated elsewhere), has suggested that attribution retraining might profitably be combined with training in effective cognitive strategies and with the teaching of a new definition of intelligence as a thing acquired by trial and error. This study would seem to provide empirical evidence to back her suggestion.

Pearl, R., Bryan, T., & Donahue, M. (1980). Learning disabled children's attributions for success and failure. Learning Disability Quarterly, 3, 3-9.

This article presents two research studies designed to examine underachieving and normally achieving children's beliefs about the causes of their successes and failures. These two groups of children differ from those considered by previous research (helpless and mastery-oriented as measured by the IAR).

Seventy-seven underachieving and 102 control Anglo children from third to eighth grades were selected for participation on the basis of teacher ratings, intelligence test scores on the Peabody Picture Vocabulary Test (PPVT) and reading achievement scores on the Woodcock-Johnson Psycho-Educational Battery. The underachieving group, which had teacher ratings of 1 or 2 on an undescribed 5 point scale, a mean PPVT of 106, and a mean reading percentile of 22, met federal standards for an "LD" label, but had not been so classified. The control group had teacher ratings of 3, 4, or 5, a mean PPVT of 115, and a mean reading percentile of 65, and would not be labeled LD using federal guidelines.

In Study 1, children completed the Intellectual Achievement Responsibility (IAR) Scale, which measures children's perceptions of control in achievement situations. Results indicated that underachieving children had weaker feelings of internal control over success than did control children. However, while findings indicated that underachieving and control children differed in the degree to which they believed they could effect a successful outcome, the analysis did not differentiate among the types of internal and external factors that children considered important to success or failure.

Study 2, therefore, investigates whether underachieving children differ from control children in how important they believe ability, effort, task difficulty, and luck are to their success and failure in specific academic tasks. A second issue examined was whether causal attributions for success and failure would be specific to reading, a domain known to be difficult for the underachievers in this study, or would generalize to other areas. First- through eighth-grade children rated the importance of ability, effort, task difficulty, and luck to success and failure in reading, in solving puzzles and in social situations during a structured interview. For example, children were asked, "When you do really good work in reading, what makes that happen?" and asked to indicate their rating of how much difference effort would make using a four-point scale. The scale contained both the words "a lot of difference", "some difference", "not much difference", and "no difference", and four dots of decreasing size which served as a visual aid. The order of presentation of situations, success or failure outcomes, and attribution categories was randomized across subjects. Children's ratings indicated that underachievers believed lack of effort played a smaller role in their failures than did control children. This belief was held not only for failure in reading, but for other domains as well.

The authors suggest that it is important to induce underachieving children to change their attributions for failure when they possess the skills required for success, and that strategies for dealing with failure, such as overcoming failure by persisting, should be taught. Training should then include success which is achieved through further effort.

This is an interesting article which is of importance for research and intervention with LEP handicapped children. It stresses the importance of attribution retraining, which, according to the authors, is crucial to improved academic achievement. Also of interest is the finding that attribution styles of subjects in this study who had reading difficulties but were not labeled LD were similar to attribution styles of labeled children

found by other research. The externality displayed by subjects in this study, previous to the presence of a handicapping label, suggests that at least some attribution retraining might be beneficial to any LEP child who is considered for special education placement.

Pearl, R. (1982). LD children's attributions for success and failure: A replication with a labeled LD sample. Learning Disability Quarterly, 5, 173-176.

Previous research by this author suggested that a group of children who met learning disability (LD) labeling criteria but were not so labeled due to parochial school attendance attributed their failures less to a lack of effort than did normally achieving children (Pearl, Bryan and Donahue, 1980; annotated elsewhere). The present study was conducted to replicate this finding in a labeled sample of learning disabled (LD) children.

Subjects were Anglo third and fourth graders. The LD sample contained 13 girls and 16 boys, and the control sample, which was matched on the bases of grade, sex and classroom enrollment, contained 11 girls and 12 boys. Children were asked to respond to a forced choice questionnaire which was read to them by the experimenter. Items asked about reasons for success or failure in putting together a puzzle, reading or getting along with other children. Choices offered allowed the calculation of a score ranging from zero to three for effort, ability, luck and task difficulty dimensions.

Data for the effort, ability and luck dimensions were analyzed using separate repeated measures ANOVAs. Group (LD or control), grade (3rd or 4th) and sex were used as between factors; outcome (successful or not) and situation (reading, puzzle or social) were used as repeated measures. The following significant differences were found: (a) Control children thought that their failures in reading and on puzzles were more the result of a lack of effort than did LD children; (b) among 3rd graders, control children considered ability to be more involved in success at puzzles than did LD children; (c) among 4th graders, control children attributed success in reading to ability more than LD children did; and (d) LD children saw luck as more of a cause of success and less of a cause of failure than did controls.

The author concludes that the "pessimistic" beliefs of the underachieving children in her first study are replicated for this labeled sample. She notes one difference, in that LD children in this study did not differ from controls in their attributions to effort for failure in the social domain; i.e., they appeared to believe, along with controls, that social failure could be overcome with effort, while underachievers in the previous study did not. Pearl suggests that the LD label may allow children to limit negative self-evaluations to academic areas, although comparisons of sociometric ratings for both samples also suggest differences in popularity between the LD and underachieving samples.

Overall, Pearl concludes that "successes and failures do not always mean to learning disabled children what they do to other children" (p. 176). LD children may not see success as reflecting something positive about themselves, and may not see failure as something to be overcome by effort.

These results are consistent with those of other studies of LD children's patterns of attribution (annotated elsewhere). As with most other studies, however, the sample is limited to Anglo children. It would be interesting to see how the attributions of normally achieving LEP and LEP handicapped Hispanics compare to those of the samples that have been studied thus far.

Tollefson, N., Tracy, D. B., Johnsen, E. P., Buenning, M., Farmer, A., & Barke, C. R. (1982). Attribution patterns of learning disabled adolescents. Learning Disability Quarterly, 5, 14-20.

This study compared the general self-esteem and attributions of learning disabled (LD) and non-LD junior high school students, and also compared LD students' general attributions to their task-specific attributions. It was hypothesized that task-specific attributions might provide a better explanation for the patterns of behavior characteristics of learning disabled students than do general attributions.

Subjects were 35 7th, 8th, and 9th graders who had been identified as LD, and 99 7th, 8th, and 9th graders who did not receive any special education services. Males and females were included in both groups. Ethnicity and SES information about subjects is not provided, and no reason for the large difference in the number of subjects in the two groups is given.

All subjects completed the Rosenberg Self-Esteem Scale and the Intellectual Achievement Responsibility Questionnaire (IAR). In addition, LD subjects participated in an attribution task which consisted of three short dictation-type spelling tests. One test contained 5 easy words, one contained 5 moderately difficult words and one contained 5 difficult words. Tests were composed by LD students' resource room teachers.

Before each test, students were asked to predict how many words they would spell correctly; following test feedback, they were asked to answer a multiple choice question which attributed their performance to ability, luck, effort or task difficulty.

T-tests for LD and non-LD groups showed no difference in self-esteem scores. Two IAR subscales (internal attributions and effort attributions) were also compared; no significant group differences were found.

Attribution test results (LD students only) showed that attributions for success or failure varied with task difficulty. Success on the easy words was attributed to task ease, success or failure on the moderately difficult words was attributed to effort, and success or failure on the difficult words was attributed to either ability or task difficulty. Results for prediction of future performance suggested that LD students predicted future scores which were discrepant from their previous performance, although patterns of

discrepancy were not consistent across subjects.

The relationship between LD students' general and task specific effort responses was also examined using biserial correlations between IAR effort items and spelling test attributions. Only three of a possible 36 correlations achieved statistical significance, suggesting that attributions in the two situations were not related.

The authors suggest that the results of their study may be explained by social desirability effects. When taking the general self-esteem and attribution measures, LD students were able to recognize and endorse the answers that they "should" give. However, these did not reflect their actual thoughts about academic tasks. The authors note that the task-specific attributions of their LD sample are consistent with a learned helplessness model, while the LD childrens' general attributions are not. They further suggest that the discrepancy between general and task specific attributions may help to explain some of the inconsistencies about LD children's attributions found in previous research.

It is somewhat difficult to evaluate the results of this study in that the discrepancy between general and task-specific attributions for non-LD children is not explored. It may be that all children vary their attributions from the general case to the more specific. However, if this "gap" in attributions is only characteristic of LD children, or is more pronounced for LD children than for non-LD children, these findings have major implications for attribution retraining programs. Steps must be taken to insure that such programs are actually changing children's attribution patterns and not just teaching them to give a socially desirable response, as subjects in this study did. This would seem to be especially important for the handicapped LEP student, who has been characterized by some as wanting to please significant others. It is possible that these children could sense the attribution wanted by the teacher and repeat it back without achieving the desired effect of changing the child's thoughts about the causes of success and failure.

Hill, C. L., & Hill, K. A. (1982). Achievement attributions of learning disabled boys. Psychological Reports, 51, 979-982.

This study examined the achievement attributions of a sample of learning disabled boys to determine whether their attribution patterns match the learned helplessness model. This match was suggested by Thomas (1979; annotated elsewhere).

Subjects were 28 learning disabled and 28 non-labeled Anglo boys "from a middle class background." Half the subjects were third graders; the other half were in grade six. Subjects completed the Intellectual Achievement Responsibility Questionnaire. Four subscale scores were examined: internal/success, internal/failure, attributions to effort and attributions to ability.

Analyses of variance showed that learning disabled boys showed less internal responsibility for success, while the groups did not differ in

failure attributions. The only significant effect for failure attributions was observed across grade levels. Sixth graders showed more internal responsibility for failures than did third graders.

Analysis of effort/ability attributions for success yielded a main effect for learning disability for effort but not for ability. Learning disabled boys perceived lower internal control for experiences of success as achieved through effort than non-labeled boys perceived. No differences were found for failure attributions.

The authors suggest that the pattern observed in their study does not conform exactly to the learned helplessness model, and in fact, may be more debilitating than that model suggests. Rather than feeling that events in general are not under control, learning disabled boys surveyed here accepted responsibility for failure, but not for success, which they perceived as a function of external factors. The authors suggest that the disruptive or off-task behavior which is often observed in learning disabled students makes sense given this set of attributions. "The learning disabled child may in fact perceive little to gain and much to lose from participating in on-task classroom activities..." (p. 982).

This study is limited by its use of a small sample of only Anglo males. However, if the attribution patterns observed here are characteristic of other learning disabled populations, including the handicapped LEP, these results suggest that attribution retraining will need to incorporate some aspect that teaches the child that success occurs as a result of his/her increased effort --and not because "luck" or another external factor takes over while he or she is still trying.

Willig, A. C., Harnisch, D. L., Hill, I. T., & Maehr, L. (1983). Sociocultural and educational correlates of success-failure attributions and evaluation anxiety in the school setting for Black, Hispanic and Anglo children. American Educational Research Journal, 20, 385-410.

Much concern has been expressed over the fact that children outside the middle American mainstream often suffer from debilitating negative motivation that interferes with academic performance and school progress. This study examined the relationship of social, cultural, and personal factors to success-failure attributions and test evaluation anxiety—two major motivational variables which, according to research cited by the authors, relate to school performance. The role of these factors in moderating achievement attributions and evaluation anxiety as they affect math performance in school was studied for 397 Anglo, Black, and Hispanic students in grades four to eight. Correlates of text anxiety and causal attributions (abililty, effort, luck, and task difficulty as applied to both school successes and school failures) were examined for the three groups of children. Specifically examined was the relationship of both test anxiety and the eight causal attributions to achievement test performance and to sociocultural variables such as ethnicity, level of parental education, family intactness, and mobility of the family. These variables were considered in developmental terms, wherein the relationships were examined between the attributional

anxiety and sociocultural variables as children progress through school from grades four to eight, or ages 9 to 15. Test anxiety was assessed by the Test Anxiety Scale for Children (TASC) and defensiveness with the Lie Scale for Children (LSC). Achievement attribution was assessed by a scale adapted by Hill and Hymel. Educational performance was measured by the Inter-American Series Tests of General Ability, and family and social background data were obtained from school records. Socioeconomic status was estimated using both parents' years of education.

Analyses which included a series of multiple regressions and discriminant analyses indicated that low motivation contributed to low academic achievement in all groups, but that different factors were important for different groups. Highly test-anxious students generally showed negative attributions, and believed that success was due to luck, while failure was due to a lack of ability. They also credited failure to task difficulty. In contrast, students with a positive sense of competence and individual positive attributions (success due to ability or effort and failure due to lack of effort) were not highly test-anxious. Thus, strong evidence for a relationship between test anxiety and negative attributions and between test anxiety and a lack of sense of competence was found.

The authors present findings regarding each racial/ethnic group in their study which can be summarized as follows:

1. Patterns for Black Children. Although attributional variables did not differentiate Black children from other ethnic groups in general, a pattern emerged within the Black group for a few Black children who make attributions of success due to luck and failure due to lack of ability. These attributional variables were related to lower math scores for these children and were also associated with high scores on the test anxiety scale, low scores on the Lie Scale for Children (LSC), being female, having better educated parents, and coming from more mobile families. The authors conclude that Black children do not necessarily develop a lower concept of their ability than do children in other ethnic/racial groups and that Black children as a group do not attribute successes and failures to external sources such as luck more so than do children of other ethnic/racial groups.

2. Patterns for Hispanic Children. Hispanic children demonstrated higher test anxiety than other groups and also a greater tendency to attribute failure to lack of ability (but not to task difficulty). According to the authors, the Hispanic children who show the most detrimental movitational patterns are those who are in the process of shifting from one sociocultural group to another. This moderately acculturated group was most likely to show debilitating attributions, higher defensiveness, and higher anxiety scores (although these scores are suspect because of high LSC scores). Patterns of attributional responses and anxiety scores both appear to indicate a lower self-evaluation for the moderately acculturated children than for the least and most acculturated children.

3. Patterns for the Anglo Children. The most salient variables for Anglo children were positive attributions that were related to higher math scores and higher grade levels.

In general, causal attributions were more predictive of math scores for Black and Anglo children, while anxiety scores were more predictive for Hispanic children. Across ethnic groups, those children who experience a debilitating constellation of motivational variables are from families who are upwardly mobile and on the borderline of socioeconomic or cultural strata. Findings suggest the importance of developing instructional activities to facilitate positive motivation which are in accord with the motivation needs of the particular child as well as the need for further research which pinpoints the motivational needs of different groups of children.

This article stresses the need to view the child as a person with unique individual needs. The authors state that for Hispanic children, the current focus of bilingual programs on the concomitants and consequences of cognitive/language variables could profitably be expanded to include a focus on the antecedents, concomitants, and consequences of motivation and self-concept variables. The authors further suggest that if Hispanic children's attributions and other motivational factors are ignored, programs to facilitate language and cognitive development will be far less likely to succeed. The researchers conclude that motivation is an important determinant of school performance for Black and Hispanic as well as for Anglo-American children, although different motivational factors affect these groups differently. These findings are important to take into consideration when working with limited English proficient (LEP) handicapped children. It is necessary to develop programs which are based on research that considers the unique needs of this group and that will help to develop positive motivation and coping skills.

3. Attribution Patterns of Handicapped Students under Different Conditions

The articles annotated in the previous section have considered the relationship between some characteristics of a child (e.g., a handicapping condition) and attributions for success and/or failure. The four annotations in this section expand the study of this relationship by considering situational factors which may, along with child-related variables and success or failure outcomes, influence attribution patterns. The factors considered include: (a) high, moderate and low task difficulty (Aponik & Dembo, 1983); (b) contingent versus noncontingent reinforcement (Kleinhammer-Tramill,

Tramill, Schrepel & Davis, 1983); and (c) competitive versus noncompetitive reward structure (Ames, 1978). A final study (Pearl, Bryan & Herzog, 1983) considers relationships among a situational factor (higher or lower success), task strategy, and patterns of attribution.

Findings related specifically to each of these situational variables are presented within each annotation. However, taken together, findings suggest that situational variables can have an influence on children's attributions or learned helpless behavior which is separate from or additional to the influence of child-related variables. These results therefore suggest a need to identify and consider situational variables (such as reward structure) which may influence the attributional process of the LEP handicapped child. These situational variables might also be incorporated into attribution retraining procedures, and into the classroom setting.

Aponik, D. A. & Dembo, M. H. (1983). LD and normal adolescents' causal attibutions of success and failure at different levels of task difficulty. Learning Disability Quarterly, 6(1), 31-39.

These authors begin by noting that the majority of attribution studies focus on one (usually unspecified) level of task difficulty. Those studies which have considered task difficulty as a variable suggest that it may be an important determinant of subsequent causal attributions. Therefore, the purpose of the present study was to compare learning disabled (LD) and nonhandicapped adolescents' causal attributions for success and failure on tasks which were easy, moderately difficult and very difficult.

Thirty-six LD and 36 nonhandicapped adolescents identified as high achievers by their teachers served as subjects. Subjects ranged in age from 12 years, 9 months to 15 years, 5 months. The Intellectual Achievement Responsibility Questionnaire (IAR) was administered to both groups of subjects prior to the study to substantiate the expected attributional differences between them. As expected, nonhandicapped subjects were significantly more internal on the full scale and on its success and failure subscales than were LD subjects.

Subjects participated in an experiment in which task difficulty was varied. The task for experimental trials consisted of sets of 10 analogies (adaptations developed by Gruber [1967] for the Miller Analogy Test), which had been pretested on other adolescents to determine their difficulty. All

subjects completed one easy, one moderate and one difficult set of analogies and received either success or failure feedback. Task difficulty was conveyed by a bar graph depicting the percentage of students who previously had succeeded or failed on the analogies and was validated by a follow-up question which asked subjects how hard they believed the analogies they had just completed had been. Subjects who did not agree with the difficulty level assigned by the experimenters were replaced. The order of presentation of analogies (easy, moderate or difficult) and success or failure feedback were counterbalanced across subjects.

After each set of analogies was completed, subjects were told either that they had done "better than" or "not as well as" other children their age. They were presented with six pairs of reasons for their success or failure and asked to indicate the reason from each pair that best explained their performance. Reasons allowed for attributions to four categories: luck, task difficulty, effort and ability. Each subject therefore completed and made attributions for one easy, one moderate and one difficult analogy set.

Attribution category scores were tallied by assigning a point to an attribution category each time it was selected, giving a possible score range of 0 to 3 (the higher the score, the more often the attribute was chosen). Attribution categories were analyzed separately using a 2 (subject category; normal, learning disabled) by 2 (feedback condition; success, failure) by 3 (task difficulty level; easy, moderate, difficult) repeated measures ANOVA.

Significant results for ability included the following: (a) The LD group made fewer attributions to ability than the nonhandicapped group at all levels of task difficulty; (b) ability attributions of normal subjects in the success condition did not vary with task difficulty level, and in the failure condition, normal subjects made more ability attributions at the easy level than at the moderate or difficult levels; (c) LD students made more attributions to ability in the failure condition than in the success condition.

Analysis of effort data showed that: (a) Following moderate and difficult tasks, nonhandicapped students made more attributions to effort after success than after failure; no effects were found for easy tasks; (b) similarly, LD students made more attributions to effort after success than after failure; for LD students, this effect was found at all levels of task difficulty; (c) as the task became more difficult, nonhandicapped subjects gave more effort attributions in the failure condition; and (d) as task difficulty increased, LD subjects also gave more effort attributions in the success condition. Unlike nonhandicapped subjects, they did not decrease effort attributions in the failure condition.

Attribution to luck showed the following significant differences: (a) Overall, LD students made more attributions to luck under success conditions than did nonhandicapped students; (b) nonhandicapped subjects made more luck attributions for all task difficulty levels under failure conditions than under success conditions; (c) LD subjects attributed more to luck when given failure feedback than when given success feedback for the easy task level; and (d) as task difficulty level increased, LD subjects' attributions to luck also increased under both feedback conditions.

Results for task difficulty level showed that in the success feedback condition, the total sample decreased attribution to task difficulty as task difficulty level increased. Under failure conditions, attributions to task difficulty increased as task difficulty level increased.

The authors note that LD and nonhandicapped students differed in a number of ways in their attributional responses to changes in task difficulty level and success/failure feedback. The differences are characteristic of those attributed to mastery-oriented and learned helpless individuals, e.g., LD subjects were more inclined to see outcomes as the result of luck than were nonhandicapped students. However, the authors highlight two "unexpected" findings. First, although previous research has suggested that LD students discount the role of effort in achievement outcomes, these LD subjects saw effort as more important to success than failure. Second, while normal students in the failure condition had been expected to make attributions to insufficient effort, they placed a greater emphasis on a lack of ability.

The authors conclude that their hypothesis that task difficulty level would influence attributions was confirmed and suggest that researchers and educators should focus on altering perceptions of task difficulty as an approach to attribution retraining. They note that both LD and nonhandicapped students in the failure condition saw effort as more important on the easy task than the difficult one, when the opposite approach might have been useful. They support the idea of teaching the low achieving student task analysis, both so that these students might learn to realize that some tasks are not as difficult as they appear, and so that these students might be taught that a difficult task calls for greater effort.

Several studies annotated thus far have suggested that attribution training must be more than a call to increase effort. Results of this study support that idea, and suggest another area (task analysis) that might fruitfully be included in attribution retraining research and program design. As with many other studies, it would be of interest to see a replication which focuses on the effects of task difficulty on attributions which uses LEP handicapped students as subjects.

Kleinhammer-Tramill, P. J., Tramill, J. L., Schrepel, S. N., & Davis, S. F. (1983). Learned helplessness in learning disabled adolescents as a function of noncontingent rewards. Learning Disability Quarterly, 6(1), 61-66.

Previous literature has suggested that noncontingent rewards for positive performance are associated with learned helplessness. Current educational practices stress the use of frequent rewards for children who have experienced repeated failure. Therefore, this study examines the effect of noncontingent rewards on learned helplessness and subsequent task performance in learning disabled children.

Twenty-four learning disabled students (18 males, and 56 females, 10-14 years old) completed two series of tasks. The first involved construction of a series of block design patterns, of which only half could be constructed with the materials provided. Children were randomly assigned to one of three reward schedules: (a) correct response-contingent reward; (b) 100% noncontingent reward, i.e., reward for any performance; and (c) 50% random noncontingent reward. A fourth (control) group was not exposed to the block designs.

The second task series involved the solution of coding problems. On these tasks, all children received response-contingent rewards for performance. Response latency and errors on each coding task served as dependent measures. Analysis of variance yielded significantly greater response latencies for subjects previously assigned to the noncontingent reward conditions than for those who received contingent rewards and for controls. No difference in the number of errors was found.

According to the authors, results suggest that learning disabled children may become "learned helpless" as a result of instructional interventions involving use of noncontingent rewards. The authors mention two educational implications of their findings. First, when designing curriculum materials and planning instructional strategies, educators may need to show increased awareness of the potential effects of placing children in uncontrollable situations. Second, certain aspects of teacher training may require modification; specifically, theories underlying the use of applied behavioral analysis, selection of appropriate reinforcement schedules, and use of positive feedback for incorrect performance must be reconsidered.

The authors note that their study is limited in that only LD children served as subjects and in that sex differences were not considered. Nonetheless, this is an important article in the literature of learning disabilities. It stresses the importance of using rewards in a sensible way that promotes children's feelings of control, a factor that sometimes is overlooked in special education programs. It is important to examine how rewards are used when working with LEP handicapped children to avoid or prevent learned helplessness.

Ames, C. (1978). Children's achievement attributions and self-reinforcement: Effects of self-concept and competitive reward structure. Journal of Educational Psychology, 70(3), 345-355.

This research examined the influence of self-concept on children's achievement attributions and reinforcing behaviors in the presence of a competing or a noncompeting other.

Subjects were 112 fifth-grade boys and girls classified as either high or low in self-concept as measured by the Piers-Harris Self-Concept Scale and the Children's Manifest Anxiety Scale. Subjects worked in pairs at an achievement-related task consisting of sets of line diagram puzzles. Children were instructed to trace all lines without lifting their pencils and without

tracing any line twice. Reward structure was manipulated by varying children's expectations of receiving a prize for their performance. Noncompetitive pairs were told that each of them would receive a prize for their participation; competitive pairs were told that the child who solved the greater number of puzzles would receive the prize. Solvable and unsolvable puzzles were presented and performance outcomes were manipulated by varying the number of solvable puzzles given to each child. In the success outcome condition, four of five puzzles were solvable; in the failure condition, one of five could be solved. After a prespecified 5 minute time limit, both children were asked to announce their scores.

Following the completion of the puzzle task, ratings for five dependent measures were collected. Attribution ratings for self and others were obtained by asking children to estimate "the contribution of ability, effort, luck and task difficulty to their performance," using a questionnaire technique. Reward for self and other ratings were measured by asking each subject how many stars he/she felt he/she and the other child from the pair deserved for performance on the puzzle task. Subjects' tendencies to use self-reinforcement, self-therapy and self-criticism following task completion were assessed by reading 15 statements to the subject (5 of each type) and asking for a yes/no response to the question "Does this describe how you feel?"

Self-reinforcement items included positive statements such as "I feel smart," and "I am a good worker;" self-therapy items included sentences such as "I do things correctly most of the time," and "I could do better another time"; and self-critical items included punitive statements such as "I feel dumb," and "I can't do anything right."

Results suggest that high self-concept children attributed success outcomes to high ability and engaged in more positive self-reinforcement following success than did low self-concept children. The affective significance of achievement outcomes was accentuated in the competitive setting for high but not low self-concept children, i.e., high self-concept children felt more successful in the competitive condition than in the noncompetitive condition when they solved puzzles and felt more distressed in the competitive condition when they experienced failure. High self-concept children's estimates of their ability covaried with success or failure, while low self-concept children's estimates did not, suggesting that low self-concept children ignored performance feedback when making judgments about themselves. The author concludes that high and low self-concept children differ in their cognitive and affective reactions to success and failure experiences in social settings that involve reward contingencies.

The conditions under which this study was carried out were rather involved, and in considering results, it is important to remember that it was conducted in a laboratory rather than a naturalistic setting. Nonetheless, its results have implications for the implementation of programs for handicapped minority children, since it is possible that some of these children are low in self-concept. It is important to realize that it will be necessary to train these children to process and interpret their behavior in new ways. It is especially important to note that low self-concept children in this study were not influenced by success, suggesting that there is a need

to make low self-concept children more aware of good performance when it occurs, and to encourage them to use self-reinforcement more frequently.

Pearl, R., Bryan, T., & Herzog, A. (1983). Learning disabled and nondisabled children's strategy analyses under high and low success conditions. Learning Disability Quarterly, 6, 67-74.

This study investigated two areas: learning disabled (LD) and nondisabled (NLD) children's explanations of successful and unsuccessful performances, and the way in which LD and NLD children remembered, attributed reasons for and evaluated similar performances. It was hypothesized that NLD children would use more analytic and strategy-specific terms in analyzing unsuccessful performances than would LD children. The authors suggest that examining the way in which LD children analyze and remember tasks might help to explain the deficit in problem solving strategies these children frequently show.

Subjects were Anglo parochial school students in 2nd, 3rd, 5th and 6th grades. The 21 children in the LD group met federal guidelines for this classification (although they were not so labeled); the 26 children in the NLD group (who were matched to the LD sample by grade and sex) did not.

Subjects participated in a bowling game. Scores for the game could be programmed, and the game was arranged so that the ball disappeared before it reached the "pins." Children received either a high success (most scores close to the maximum possible) or a low success (most scores close to the lowest possible) score set. Both the high and low success conditions contained three trials in which the highest possible score was achieved. Subjects recorded their scores as they bowled, and after specified turns, talked into a tape recorder about how they were doing and why they were getting the scores they had received. After the game was complete, children were interviewed about how many high and low scores they had achieved, why they had gotten these scores and how well they thought other children would do. They were also asked to attribute their highest and lowest scores to luck, effort, ability or task difficulty.

Children's tape-recorded comments were coded on a zero to two scale, with a two indicating an utterance which described a specific, controllable method for approaching the bowling game. Intercoder reliability averaged 88%.

Strategy results were analyzed using ANOVAS. Results indicated that following both high and low scores, NLD children in the low success condition made more specific analyses than did NLD children in the high success condition; LD children's analyses did not differ. Remembered perceptions of performance did not differ in the low success condition; in the high success condition, LD children remembered more low scores and predicted less successful future performance than did NLD children.

Attribution differences were also noted for the two groups. In the high success condition, NLD students attributed their high scores to ability; LD children attributed them to effort. In the low success condition, NLD children attributed high scores to effort; LD children's attributions were scattered across categories. NLD children varied in their attributions for low scores, but were consistent across high and low success conditions; LD children made more effort attributions under high success conditions, and more task difficulty/bad luck attributions under low success conditions.

The authors conclude that NLD children's strategy analyses varied with level of success, while LD children's did not. They suggest that LD children's attributional tendencies, (as described in a follow-up interview), may have led the LD children to view their difficulties as something which could not be overcome. While NLD children favored effort attributions under both high and low success conditions, LD children in the low success group made more stable, external attributions, such as attributions to task difficulty. The authors raise the possibility that the "strategy deficit" associated with LD students occurs because poor performance leads to "waiting out" the task or waiting for luck to change. In contrast, NLD students see poor performance as a cue to examine what they are doing that is right or wrong. The authors note, however, that since some success trials were included, LD children may simply have been satisfied with their performance in the low success condition and felt no need to change it. Finally, the authors state that children's attributions about causes of high scores provide support for the idea that LD and NLD children interpret their performance differently, with LD children favoring more external and less controllable causes of success.

The sample in this study is limited to Anglo children, making it difficult to know how much of the relationship between attributions and cognitive strategies suggested here would also apply to the handicapped Hispanic and/or LEP student. Nonetheless, the results are interesting in that they may begin to explain the process by which attributions are linked to performance. These results are consistent with those of other studies in that they suggest that attribution retraining must help the LD child learn to reinterpret the meaning of failure.

4. Attribution-Instruction Matching

The studies presented in the previous section suggest that situational (as well as child-related) variables can influence children's attribution patterns. The three studies annotated in this section focus on one of the most important school related "situations" which children encounter, i.e., instruction in the classroom.

The three sets of researchers whose work is described here share the assumption that matching method of instruction to children's attribution patterns can facilitate learning. Evidence presented in the annotations supports this assumption for both handicapped and non-labeled children.

Pascarella, E. T., & Pflaum, S. (1981). The interaction of children's attributions and level of control over error in reading instruction. Journal of Educational Psychology, 73, 533-540.

The purpose of this study is to examine how children's level of attribution might best be matched to reading instruction method. The authors review literature which suggests that attribution pattern affects response to reinforcement, and suggest that instruction by attribution matching might provide an alternative to attribution retraining.

Subjects were 32 children in grades three through five. Sixteen subjects were identified as learning disabled (LD); the other 16 (a "poor reader" group) were same-gender children from the LD subjects' regular class reading groups. LD and poor-reader subjects did not differ in age, sex, IQ or pretreatment reading achievement. They did, however, differ on scores on the Intellectual Achievement Responsibility Scale (IAR). LD subjects were less internal (i.e., felt less personal responsibility for academic outcomes) than did poor readers.

Subjects received 24 reading lessons (approximately 18 hours of instruction) over a 2-week period about using context clues in oral reading under one of two conditions. In the teacher determination of errors (TDE) condition, teachers simply corrected student errors and reinforced correct responses. In the student determination of errors (SDE) condition, teachers encouraged students to work out correct answers for themselves by using questions. Four teachers were assigned to and provided with instructional materials for each of the two conditions (TDE and SDE), and instruction was carried out in students' regular classroom reading groups. These groups contained both LD and poor-reader subjects.

Since intact reading groups were used in selecting subjects for each condition, preliminary data analyses focused on group comparability. Reading groups did not significantly differ in age, sex, pretreatment IQ, pretreatment reading achievement or IAR score.

An attribute by treatment interaction multiple regression model was used to analyze results. Posttreatment reading achievement (as measured by the Analytic Reading Inventory) was used as the dependent variable, experimental condition (TDE or SDE) and subject group (LD or poor reader) were used as independent variables and IAR score was used as the attribute covariate.

A significant attribute by treatment interaction (ATI) was found. For children with an IAR score of 25 or more (more internal children),

posttreatment reading achievement was generally higher for the SDE condition. For children with IAR scores below 25 (more external children), the TDE condition produced higher reading scores. Results of follow-up analyses showed that children with IAR attribution scores of 28 or more (more internal children) in the SDE group made significantly higher scores than children in the TDE group. For scores of 23 or less, (i.e., for more external children) the opposite was true. Children with scores in this range made significant gains in the TDE group.

The interaction for and differences between subject groups (LD versus poor readers) were not significant. However, the authors note that most LD children fell into the lower region of significance due to their low IAR scores, i.e., only one (LD) child had a score over 28 while 9 had scores below 23. They therefore suggest that overall, LD children probably benefited most from the TDE condition. Analyses using positive and negative consequence subscales of the IAR yielded patterns of results similar to those which have been described.

The authors conclude that attribution-instruction style matching is a viable instructional strategy for LD and low achieving students. They also note that their LD and poor-reader subjects were similar in IQ and achievement before treatment, but differed in attributional style. They suggest the possibility that schools may unintentionally use characteristics other than IQ and achievement in LD assignment; for example, achievement problems along with a child's belief that he/she has little control over achievement outcomes may produce classroom behaviors which lead to special education referral more frequently than do the classroom behaviors produced by achievement problems alone.

This study is of interest in that it suggests a technique (attribution-instructional style matching) that might be used in place of or in addition to attribution retraining. These results further suggest that as children receive attribution retraining, it would also be desirable to change the style of instruction they receive, so that instruction would match and reinforce the new patterns of attribution that retraining procedures seek to build. Overall, this study's results suggest that there is a need to consider both teachers and students in attribution retraining programs. Finally, this study suggests an approach (aptitude by treatment interaction) that would seem particularly well suited to the study of the LEP handicapped child. This approach might allow for the determination of the best type of instruction for children with the "attributes" of minority status and Spanish dominance.

Pascarella, E. T., Pflaum, S. W., Bryan, T. H., & Pearl, R. A. (1983). Interaction of internal attribution for effort and teacher response mode in reading instruction: A replication note. American Educational Research Journal, 20(2), 269-276.

Research evidence indicates that students respond differentially to reinforcements and degree of structure in a learning situation based on the attributions that they make for success and failure. This study is a replication of a previous one conducted by these authors (1981; annotated

elsewhere) in which children's level of attribution was matched to a reading instruction method. The authors point out that one limitation of that study was the unit of analysis employed. Data were analyzed at the individual student level only. This analysis did not indicate if reading groups behaved in the same manner as individual students. Thus, in the present study, both individual students and reading groups were used as units of analysis.

The purpose of this study was to test the interaction of student internal attribution for effort (as measured by the 19 effort items from the Intellectual Achievement Responsibility [IAR] Scale) with degree of teacher control over error correction with both individual students and reading groups as the unit of analysis. Forty-seven learning disabled and low achieving readers from 12 classes (grades 3, 4, and 5) were assigned to reading instruction programs on context cue use (using sentence meanings to decode) differing only in extent of student control over determination of errors. The instructional program used in both conditions consisted of 24 lessons, 12 on error determination and 12 on self-correction of errors.

The Teacher Determination of Error (TDE) or high-structure condition directed the teachers to clearly state to a student whether his/her response was correct and to provide a correct response if needed. In the Student Determination of Error (SDE) condition, teachers were directed to encourage students to figure out for themselves how to identify errors as serious and how to recognize good guesses while learning to self-correct. Multiple regression analyses of covariance which controlled for pretreatment reading score, internal attribution for effort and LD vs. low-reader categorization were conducted with individuals and reading groups.

Results indicated significant interactions between pretreatment locus of attribution for effort and treatment, generally replicating previous findings. Both individual students and reading groups initially high in internality showed greater reading achievement gains (as measured by the Woods and Moe Informal Reading Inventory) from an instructional condition in which they were encouraged to determine the correctness of their own responses (SDE condition). Conversely, individuals and reading groups initially low in internality benefited more from a condition in which the teacher determined response correctness (TDE condition).

This article provides an alternative explanation for the lack of success of reading programs where students fail to make long-term reading achievement gains. It is possible that students' locus of attribution for effort does not match the program's instructional strategies. The article also provides an alternative explanation for why students high in internal attribution derive greater benefits from schooling than students who are externally oriented. It is possible that the educational system is inadvertently designed to match the learning style of internally oriented students, thereby allowing greater achievement than for the externally oriented students, who are exposed to an ·cational system that does not match their locus of attribution. Further rch might explore whether this locus of attribution-instruction "gap" for the LEP handicapped student.

Bugental, D. B., Whalen. C. K., & Henker, B. (1977). Causal attributions of hyperactive children and motivational asumptions of two behavior-change approaches: Evidence for an interactionist position. Child Development, 48, 874-884.

The intent of this study was to draw together three lines of theory and research (attribution theory, social reinforcement and cognitive behavior modification) to test the interaction of causal attributions and behavior intervention strategies. Specifically, the study sought to investigate whether subjects' beliefs about the controllability of outcomes mediated their response to a behavior program. It was hypothesized that children whose attributions were more internal would benefit most from a self-control program while students who were more external would benefit most from a social reinforcement program.

Subjects were 36 hyperactive boys aged 7 to 12, 32 of whom were in regular education classes and 4 of whom were in self-contained educationally handicapped classrooms. The majority of subjects were Anglos. Half of the boys received medication to combat hyperactivity; half did not. Non-medicated subjects were selected from the same classroom as medicated subjects on the basis of teacher ratings on the hyperactivity section of the Connors Teacher Rating Scale. Medicated and non-medicated subjects did not differ significantly in age, Peabody Picture Vocabulary Test IQ score, Porteus Maze error scores, Connors ratings and attribution scores from a personal causality structured interview.

Eighteen undergraduate students served as behavior program tutors. Each tutor was assigned 2 children from different classrooms (where possible). Tutors worked with each child 1 hour per day, two days per week, for an eight-week period. Tutoring took place in the subject's regular classroom, and concerned academic content suggested by the subject's teacher (e.g., handwriting practice, simple arithmetic, drawing, spelling, etc.). For half of the subjects, tutors were instructed to use self-control training along with academic tutoring. Tutors modeled self-controlling speech and self reinforcement, and asked children to imitate them by making overt and then covert self-controlling statements. These self-statements included such things as instructions to concentrate or to work slowly and carefully. Children were also videotaped and allowed to watch playbacks of themselves using positive self-talk on two occasions. For the other half of the subjects, tutoring stressed social reinforcement. Tutors were instructed to praise children for appropriate behavior and good academic work and to ignore inappropriate behavior.

Following tutoring, tutors were asked to rate their success in implementing the tutoring package to which they had been assigned. Data for six children from the self-control group were excluded from data analysis because tutors reported that students were embarrassed by making overt self-control statements and refused to do so.

Three pre-tutoring measures were gathered for each child: a qualitative score on the Porteus Mazes, a teacher rating (using the Connors Teacher Rating Scale) and an attribution interview. Qualitative scores on the Mazes are

based on style and strategy rather than on maze solutions, and are considered to be a measure of impulsiveness. The Connors Rating Scale concerns restless, inattentive and impulsive behaviors. The attribution interview concerned causes of school success and failure, and assessed attributions to effort, teacher bias and luck.

Subjects were posttested with the Porteus Mazes, and Connors Scale ratings were collected from teachers after tutoring sessions ended. Results were analyzed using analysis of covariance. Treatment group, attribution-intervention congruence and medication status were used as independent variables, and prescores on either the Porteus Mazes or the Connors Scale were used as a covariate. Results for Porteus Maze scores revealed significant effects for both attribution-intervention congruence and medication status. The self-control program was found to reduce impulsive errors most for children whose effort attributions were high and/or children who were nonmedicated. The social reinforcement program was more effective for children who attributed school outcomes to luck or teacher bias and/or took medication for hyperactivity. No significant differences were found for teacher ratings.

The authors summarize their findings as follows: "What we are emphasizing here is that change strategies . . . have implicit attributional textures which interact with the attributional network of the individual to influence treatment impact" (p. 881). They state that their results suggest that persons who are low in their expectations of control (i.e., who make external attributions) might first need a program which emphasizes that there are cause and effect relationships in the events around them before they can benefit from a self-control (or cognitive) type of program. They conclude by calling for further research which takes an interactionist view of cognition and behavior.

Although this study uses a subject population quite different from the LEP handicapped child, and is limited by its small sample of males only, the results have a major implication for attribution retraining. Retraining programs might easily assume that the child knows there is a link between behavior and outcome, when in fact, the external or learned helpless child may perceive no link at all. It would be interesting to begin an attribution retraining program for handicapped students with a period of social reinforcement, as these authors suggest, and assess whether this would increase the benefits of retraining, or help the child learn to use his/her new attributions in settings besides the one in which training takes place. In addition, it is interesting to note that some children were "embarrassed" by rehearsing self-control statements. Since attribution retraining may stress rehearsing similar statements related to effort, this embarassment may speak to a need to be sure that retraining sessions are comfortable places for children and that a good rapport with the tutor has been established before actual retraining begins.

5. Attribution Retraining

The studies presented thus far have, for the most part, been descriptive in nature, i.e., they have considered the relationship between several types of variables and attribution patterns and/or the relationship between attribution patterns and achievement. In contrast, this final group of annotations includes studies in which an effort has been made to change children's attributions through attribution retraining. These studies share the assumptions that (a) some attribution patterns (for example, the attribution of academic outcomes to external factors such as luck rather than internal ones such as effort) are debilitating to academic performance, and (b) these patterns of attribution can be modified.

Although all studies described here focus on attribution retraining, there are important differences among them. First, the method by which this retraining is done varies greatly. Some retraining efforts have been carried out in settings outside the classroom on a one to one basis (e.g., Dweck, 1975), while others have used classroom teachers and a classroom setting (e.g., Thomas & Pashley, 1982). Some retraining programs have incorporated procedures besides attribution retraining such as contingent reinforcement (Chapin & Dyck, 1976), or self-instruction (Reiher & Dembo, 1984). Additionally, subject populations differ across studies, and have included both handicapped and "learned helpless" children.

Despite this diversity of method and subject population, results across studies strongly suggest that childrens' maladaptive attributions can be changed, at least in the context in which training occurs. While such change has not yet been attempted with a LEP handicapped population, attribution

retraining would seem to be a potentially useful practice, and one that should be considered by future research.

Dweck, C. S. (1975). The role of expectations and attributions in the alleviation of learned helplessness. Journal of Personality and Social Psychology, 31, 674-685.

This investigation is based on the assumption that the manner in which a child views failure determines much of his/her reaction to it. If failure is viewed as the result of an external force (such as ability), the child is likely to see failure as an end. Alternatively, if failure is seen as under control of internal forces (such as effort), the child is likely to see failure as a cue to try harder. The current study investigated whether altering attributions of learned helpless children, who are known to see failure as an end, would enable them to deal more effectively with failure in an experimental problem-solving situation. Helpless children were also compared to persistent children on several measures.

Subjects were twelve 8-to-13-year-old children who were identified as "helpless" (expectant of failure and debilitated by it) by their classroom teacher, school psychologist and school principal independently. Identifications were validated via a teacher rating scale which assessed children's reactions to academic situations.

Helpless subjects were first compared to a group of same-age and sex classroom peers nominated by classroom teachers. Comparisons were described as equal in ability to helpless subjects, but did not show helpless characteristics. The two groups were compared on the Intellectual Achievement Responsibility Scale (IAR); the text anxiety and poor self-evaluation subscales of the Test Anxiety Scale for Children, and a repetition choice task which assesses tendency to avoid failure versus tendency to strive for success. The task includes a choice between repeating a successfully completed puzzle or trying again on a noncompleted (failure) puzzle.

Results of group comparisons (from t-tests) showed that helpless subjects differed from persistent ones on all measures. They took less personal responsibility for outcomes, saw effort as less important to success and failure, were more test anxious, and showed poorer self-evaluations than did persistent children. Chi square analysis of repetition task results showed that helpless subjects preferred to avoid failure, while persistent subjects preferred to try for success, even on a task which had previously been failed.

Helpless subjects were divided into two groups matched on amount of performance decrement following a failure task and given intensive, relatively long-term (25 days) of experience with one of two training procedures. In a success-only treatment, trials using math problems were structured so that the subject could complete the required task well within time limits at all times. Success was attributed to the subject's responses, while failure was avoided or glossed over if it occurred. An attribution retraining treatment differed in two major ways. Instances of failure were structured into training, and

the trainer clearly attributed failure to insufficient effort. It was hypothesized that a procedure which taught helpless children to take responsibility for failure by attributing it to lack of effort would result in unimpaired performance in a posttesting situation, while a procedure which provided success only (as in many programmed learning and behavior modification programs) would lead to changes of lesser magnitude.

Results revealed that following training, subjects in the success-only treatment continued to evidence a severe deterioration in performance after failure, while attribution retraining subjects maintained or improved their performance. In addition, attribution retraining subjects showed an increase in the degree to which they emphasized insufficient motivation versus ability as a determinant of failure as measured by a short questionnaire. However, training did not produce significant changes in IAR or Test Anxiety for Children subscale scores, and while the number of children in the attribution retraining group who chose the failed puzzle in the repetition task increased, the change did not achieve statistical significance.

The author concludes that results have implications for "success only" based programs, which she suggests may be "short sighted" in light of her findings. She notes that overall, her results stress the need to consider cognitive-personality variables in behavior change strategies.

This article, which presents one of the first sets of results from an attribution retraining study, highlights an idea which is strongly confirmed by later research; namely, that experience with failure is a critical component in any program designed to assist the learned helpless child. It would be important to take this into account in any programs which were designed for the LEP handicapped child.

Chapin, M. & Dyck, D. G. (1976). Persistence in children's reading behavior as a function of N length and attribution retraining. Journal of Abnormal Psychology, 85, 511-515.

This study was designed to compare procedures involving partial reinforcement and attribution retraining on the development of persistence in children's reading behavior. The authors note that results of previous attribution retraining research might be due to effects of continuous (success-only experience) versus partial reinforcement (success and failure experiences). Consequently, in the present investigation, schedules of reinforcement and attribution retraining were varied independently to determine the relative contribution of each variable to persistence. Thirty children of unspecified ethnicities (approximately half of whom were males and half of whom were females) in grades 5, 6, and 7 served as subjects. All children were assessed as reading below grade level on the basis of the McCracken Standard Reading Inventory, and were pre-tested for reading persistence by asking them to read sentences which were above their assessed reading level. Subjects were allowed to stop the sentence reading task at any time.

During the experimental retraining procedure, two levels of a partial

reinforcement variable, termed N length (the number of successive failures prior to success), were factorially combined with the presence or absence of attribution retraining giving the following conditions: (a) N length of 1 (N1; i.e. one failure before success), (b) N length of 1 with attribution retraining (N1AR) 1 ("one not"), (c) N length of 3 (N3), (d) N length of 3 with attribution retraining (N3AR), and (e) continuous reinforcement (CRF). This condition received success-only training. Attribution retraining consisted of statements by the experimenter which stressed the importance of effort. Following success trials, children in retraining groups were told, "That was very good, that means you tried hard"; following failure trials, they were told, "No, you didn't get that, that means you should have tried harder." Corresponding responses to children in groups which did not receive retraining were either "That's right", or "No, that's wrong." The reinforcement and retraining manipulations occurred in the context of a sentence reading task presented on 3 successive days. "Failures" were embedded into the task by including 3 words above the subject's reading grade level in some sentences. Children were posttested using reading persistence sentences similar to those used in pretesting. ANOVA results revealed that the number of difficult sentences attempted by the children was increased jointly by both independent variables, that is, children in conditions b (N1AR), c (N3), and d (N3AR) became more persistent. However, children receiving success-only training or partial reinforcement with nonsuccessive failure (N1-no attribution retraining) did not show improvement from pretest to posttest. Follow-up analyses showed no significant differences among the three groups (b, c, and d) for which an increase in persistence was found.

The authors conclude that persistence in children's reading behavior is jointly facilitated by N length and attribution retraining, but note that their results also seem to indicate that the impact of attribution retraining on persistence depends on the manner in which success and failure experiences are scheduled.

This article is important in the literature of attribution retraining in that it emphasizes the importance of scheduling failure and success. Children should be taught to correctly attribute their successes, and to learn how to cope with failure. It is important to consider that partial reinforcement of behavior produces greater resistance to extinction, an idea which is again supported by this study. The scheduling of reinforcement should be taken into account when working with LEP handicapped children. They should be provided with success as well as failure experiences, and should be taught how to deal with them using reinforcement in the ways which will best maintain adaptive attribution patterns.

Fowler, W. J., & Peterson, P. L. (1981). Increasing reading persistence and altering attributional style of learned helpless children. Journal of Educational Psychology, 73, 251-260.

This study had two purposes. The first was to replicate and extend results obtained by Chapin and Dyck (1976; annotated elsewhere) with a learned helpless sample of children. Chapin and Dyck's results showed that both failure length and attribution retraining could be used to facilitate reading

persistence. The second purpose of the present study was the comparison of the effectiveness of a direct versus an indirect attribution retraining technique.

Twenty-eight children (ages 9-13), who were nominated as learned helpless by their teachers, and assessed as reading below grade level using the Iowa Test of Basic Skills, served as subjects. The subjects were the most helpless children from an initial pool of 79 children ranked according to scores on the Intellectual Achievement Responsibility Scale and a 5-item Effort Versus Ability Failure Attribution Scale for Reading. The Gray Oral Reading Test was administered to all subjects to obtain a graded work-reading level for each child.

Sentences at two levels of difficulty were constructed based on the subject's reading skill level. These were designated as Type 1 (which contained three words of approximately fourth and fifth-grade level difficulty) and Type 2 (which contained three words of approximately sixth-grade level difficulty). Children were pretested for persistence using short sentences which were read aloud, one at a time. The baseline measure of persistence was the number of sentences of each type the subject attempted.

Following the pretest, subjects were stratified by sex, degree of persistence, and IAR score and randomly assigned to one of four treatments. All treatments consisted of reading Type 1 and Type 2 sentences under differing conditions. Groups and treatments were: (a) partial reinforcement with single failure length (N1), which consisted of one failure trial among multiple success trials which were reinforced by the experimenter (e.g., "That was very good", or "No, you didn't get that"); (b) partial reinforcement with multiple failure lengths (N3), which consisted of multiple failure trials among multiple success trials that were reinforced by the experimenter as above; (c) partial reinforcement with multiple failure lengths and indirect attribution retraining (N3AR), which consisted of multiple failure trials among multiple success trials that were reinforced by the experimenter as follows: "That was very good, that means you tried hard" or "No, you didn't get that. That means you have to try harder"; and (d) partial reinforcement with multiple failure lengths and direct attribution retraining (N3DAR). Children in this group were trained in the use of self-statements by listening to a recording of a boy or girl using statements such as "I got that right. That means I tried hard" or "No, I didn't get that. That means I have to try harder". The subjects were told that these are good things to say to themselves when they succeed or fail in school. They practiced each of these statements in their own words, first aloud, then in a whisper, and finally, silently to themselves. Throughout the training, subjects in this group were reminded to use their own similar statements. The treatment consisted of multiple failure trials among multiple success trials which were reinforced by the student's covert reponses.

After four days of training, the persistence test was readministered using sentences similar to pretest sentences. The IAR scale was readministered orally one week after the treatment ended.

A Groups by Trials repeated-measures ANOVA was carried out for 2 dependent measures: reading persistence and IAR scores. Results showed a

significant effect for trials for the persistance variable, that is, subjects attempted significantly more sentences on the posttest than on the pretest. Follow-up comparisons showed that treatments N3AR and N3DAR were significantly more effective than N1 in increasing persistence, and that these two treatments were equally effective.

Analysis of the IAR scores revealed that subjects' attributions of achievement outcomes to internal factors increased significantly for all treatment groups. The multiple failure length, direct attribution (N3DAR) treatment was most effective in increasing attributions to effort.

According to the authors, the results confirm the superiority of attribution retraining to single failure length-partial reinforcement as a technique for increasing children's reading persistence. When difficult sentences were grouped in multiples, however, reading persistence was facilitated even without attribution retraining. The authors also note that attribution retraining was significantly more effective than no attribution retraining in increasing children's attributions to effort. The article offers some support for the use of self-instructional internal speech as a technique for increasing persistence and modifying attributional patterns.

This article points out the importance of failure experiences in attribution retraining of helpless children. According to the author, it is important not only to provide success experiences, but also to provide practice with failure, and training in how to cope with it. This is very important to take into consideration when working with LEP handicapped children who might show helplessness in their academic work.

The study also validates a method of direct attribution retraining which involves covert rehearsal of self-instructional statements. This method was found to be significantly better than no attribution retraining, and better (although not significantly) than indirect methods in increasing children's attributions to effort. Finally, the study confirms the importance of using an appropriate schedule of reinforcement when attempting attribution retraining.

Reiher, H. R., & Dembo, H. M. (1984). Changing academic task persistence through a self-instructional program. Contemporary Educational Psychology, 9, 894-895.

The purpose of this study was to determine whether a self-instructional method of attribution training could effectively alter both academic task persistence and effort attributions for success and failure. The effect of including a rationale for training is also considered. This study differs from previous research in that it focuses on self-instruction without the use of token or social reinforcement.

Ninety students (49 males and 41 females) in the seventh and eighth grades were selected for this study. Approximately 92% of the subjects were Anglo. These students had low effort attributions (as measured by the Intellectual Achievement Responsibility Scale), and were randomly assigned to

three groups: (a) an experimental "formal presentation" group, (b) an experimental "experience learning group" and (c) a control group.

Training consisted of five 40 minute sessions. The two experimental groups received the same treatment except for slightly different procedures during the first of 3 training stages. For both experimental groups, this first stage was used to provide a conceptual framework for the training process. To prepare the students for self-monitoring and self-instructional techniques, the concept of a thought-response interaction was introduced. The formal presentation group received this information through a one-session lecture-discussion format covering autogenic training, self-hypnosis, and psychocybernetics (self-suggestive techniques which emphasize the person's use of imaginal abilities and the power of his/her own thoughts). The second experimental group received a more experimental procedure which included activites designed to increase students' involvement duing their session (e.g., galvanic skin response monitoring).

The second phase of training emphasized the self-instructional procedure. Students were taught to self-monitor their effort level and to self-instruct in both effort and positive reinforcement.

In the third and final stage of the training the students were asked to demonstrate the self-monitoring and reinforcement procedures on new academic tasks. The control group received exactly the same academic tasks and amount of training time, but no self-instructional training was included.

Two general dependent variables were considered: persistence and attribution. Persistence was measured by the number of times the student attempted to spell an embedded failure word placed within the first four words of a five-word set. Attribution was measured using an apparatus developed by Nichols (1975). Students were asked to indicate the causal reason(s) for their performance on the spelling words by moving the hands on effort, ability, luck and task difficulty "clocks."

Results revealed that following training both experimental groups were significantly higher than the control group in both academic task persistence and effort attribution. According to the authors, the study demonstrates that an internal self-instructional approach can be as effective as reinforcement training procedures in changing causal attributions regarding achievement in academic tasks.

This is an important article in the literature of attribution retraining since it examines a new strategy for retraining students, i.e., cognitive behavior modification. Results of this study suggest that this technique can be successfully used with groups of children. Unfortunately, the design of the study does not allow an examination of the effects of including a rationale for training. However, from a common sense perspective, the idea of an introductory training rationale would seem to be a good one, and one which is worthy of further study. Future studies might also consider the introductory rationale and self-instruction procedures which are best suited to LEP, handicapped and LEP handicapped populations.

Andrews, R. G., & Debus, L. R. (1978). Persistence and the causal perception of failure: Modifying cognitive attributions. Journal of Educational Psychology, 70(2), 154-156.

The purpose of the first phase of this study was to examine the relationship between persistence at an achievement task and individual differences in cognitive attributional predispositions. The second phase investigated the possibility of changing these cognitive attributional predispositions using social and/or token reinforcement.

For Phase 1, subjects were 71 female and 87 male sixth-grade (11 year old) children. Children's attributions were assessed using two techniques. First, the Intellectual Responsibility Scale (IAR) was modified to obtain subscores for internal ability and effort attributions for success and failure. Items from the Effort Attribution Scale (EAS), a measure of the tendency to attribute both success and failure to effort were also given. Second, a more direct form of attribution assessment (an "attribution wheel") was used for specific behavioral tasks. Subjects were asked to think carefully about why they succeeded or failed at each trial of the achievement task described below and to indicate their reason(s) by using four cardboard disks. Each half-disc could be exposed to fill up to half of a circle, and could be used to indicate attributions to luck, ability, effort or task difficulty for success or failure. A circle design task, which required subjects to analyze designs into component parts and then synthesize those parts into a whole was used to elicit achievement attributions. Subjects experienced three success and three failure trials which were randomly ordered.

The persistence task was a modified version of Feather's (1961, 1963) Perceptual Reasoning Test. Two measures of persistence were derived from this procedure: time spent on a first (insoluble) item, and the number of first-item attempts made before turning to an alternative task.

Product-moment correlations reveal a similar pattern for both sexes of a significant relationship between attributions for failure and persistence. Attribution of failure to insufficient effort was positively related to persistence; attributions of failure to ability and/or task difficulty were negatively related to persistence. Subscales of the IAR and Effort Attribution Scale showed only weak relationships to persistence and to attributions for success and failure made for the circle design task.

The authors conclude that for the present sample, the two methods of assessing attributional predispositions (IAR and direct assessment) are not measuring the same variable. They suggest that attributional patterns assessed for specific situations may be more useful in predicting children's behavior than a general measure such as the IAR.

In Phase 2 of the study, an attempt was made to influence achievement by inducing attributions to effort in subjects using reinforcement procedures.

Forty-two male subjects (the half of the male sample from Phase 1 who least frequently attributed failure to lack of effort), were randomly assigned to 3 treatment conditions: (a) a control group which received no training but was posttested, (b) a social reinforcement group (SR) in which all effort

attributions were reinforced verbally, and (c) a token plus social reinforcement group (TR + SR) in which subjects received a token and verbal reinforcement for every effort attribution. Tokens could be exchanged for the tangible(s) of the subject's choice.

Subjects were trained using a Block Design Task which was aimed at inducing effort-oriented schemata. During reinforcement training, success and failure outcomes were contrived by the trainer. The trainer reinforced spontaneous effort attributions, and any effort attributions made as the subject used an attribution "light box" following each trial. The box allowed for attribution to only one category (effort, ability, luck or task difficulty) for each block design. Training continued for 60 trials or until 8 of a consecutive 10 attributions were made to effort.

Following training, four immediate posttest (IPT) tasks were administered. Attributions for all IPT tasks were measured with the attribution wheel. Task 1 consisted of 10 unreinforced block design (training task) trials. Task 2, a circle design, was similar to the training task. This task provided a basis for assessing near-generalization of treatment effects and is described by the authors as a "near-transfer task." The third, an anagrams task, is described as "more remote and school related." It was used to provide an achievement-related, cognitive activity with clear success or failure outcomes and was used to assess remote transfer effects. The fourth task, the Perceptual Reasoning Test, measured persistence. Two measures were derived: time spent on the first (insolvable) item, and the number of attempts made on the first item before turning to another task. Subjects also completed the IAR and EAS following training.

A delayed posttest (DPT) (7-9 days later) and a follow-up posttest (FPT) (4 months after the delayed posttest) were also given to determine the durability of treatment effects and to explore the extent of generalization of training to tasks given by a tester other than the trainer. For both delayed posttests, parallel forms of the block design, circle design, anagrams and Perceptual Reasoning tests were administered. Attributions were measured with the IAR and EAS scales and the attribution wheel.

An ANOVA which used effort attribution scores that were adjusted for initial effort attribution levels revealed a significant treatment effect for IPT and DPT block designs. Newman-Keuls analysis of treatment means averaged over occasions indicated that for both posttests, both SR and TR+SR subjects made more effort attributions for both successes and failures than did control subjects. No difference between training methods was found.

Analysis of circle design attributions revealed significant treatment and occasion effects. At DPT, subjects trained in the SR condition displayed significantly higher effort attributions than did control and TR+SR subjects. The TR+SR group did not differ from the control group.

Analysis of anagrams attribution data revealed that both SR and TR+SR subjects made more effort attributions for both failure and success trials than did control subjects. There was no significant difference between treatments.

No significant changes were found on the six IAR subscales or the E+ (effort attributions for success) subscale of the EAS at IPT. The SR group, however, was found to have significantly higher mean scores than did controls on the E- (effort attributions for failure) subscale of the EAS.

An analysis of variance of persistence scores showed that SR group subjects exceeded their pretest scores on both persistence measures (time spent and number of tries) at IPT and DPT. In addition, the TR+SR group exceeded their pretest persistence scores on both indexes at IPT and on the resistance to extinction measure at DPT. Analysis of variance for follow-up results revealed that experimental subjects still made significantly more effort attributions than did controls for both success and failure trials on the circle design tasks and for success trials on the remote transfer anagrams task. No significant effects were found for persistence scores at DPT.

A 2 x 3 (tester x treatment) ANOVA was performed to analyze generalizability of treatment effects to persons other than the trainer. Analysis of success trial scores on the circle and anagrams tasks showed that TR+SR subjects tested by the trainer still made significantly more effort attributions than did either control or SR subjects. For the independent tester, the SR group made significantly more effort attributions than did the control group. For the circle design task, both experimental groups attributed failure to insufficient effort significantly more than did controls for both testers.

According to the authors, the results of this study give strong support to the major tenet of the attribution model of achievement motivation, i.e., that causal ascriptions influence and perhaps even determine subsequent achievement behaviors. The effectiveness and durability of the experimental training procedures in modifying children's attributional patterns were supported. The authors conclude that the application of systematic social reinforcement is highly successful, and could be adapted as an attribution retraining procedure for classroom groups.

Generalization of training effects was strongly evident across the posttest tasks, including the more remote, more school-related transfer task. However, the authors caution that the training procedure was aimed at only short-term behavior change and focused only on the narrow aspect of children's achievement behavior in the experimental context; so this transfer result is only a tentative indication of the possibility that treatment effects may have transferred to the subject's general achievement behavior.

It is also important to note that this study attempted to validate a commonly used measure of attribution by using the Intellectual Achievement Scale along with a behavioral assessment of attribution patterns. The behavioral measure was found to be "more productive" than paper and pencil measures. However, as the authors note, the utility of such a measure will be clarified when evidence is available about the generality of attributional schemata across different tasks and situations. The authors further conclude that the generally low correlations between IAR subscale scores and scores obtained from the behavioral measure of attributional responses in Phase 1 give some indication that the IAR may not be as suitable a measure of attributional predispositions, although its suitability has been apparently assumed in many previous studies.

This is an important article which gives empirical support to the need for attribution retraining programs, and gives detailed tasks and procedures which may be useful in attribution retraining as well as in facilitating generalization to other contexts. It is also important in that it tries to make researchers aware of the need to validate the instruments they use. Finally, this set of studies considers the problem of generalization and maintenance of the results of attribution retraining to a much greater extent than others have by incorporating a series of posttests. At present, a number of attribution training methods (e.g. cognitive behavior modification, reinforcement programs, etc.) can claim short term success in changing children's attributions. Perhaps the inclusion of longer term follow-ups in future studies would be useful in identifying "best" retraining practices with different groups of children, including the LEP handicapped child.

Thomas, A., & Pashley, B. (1982). Effects of classroom training on LD students' task persistence and attributions. Learning Disability Quarterly, 5, 133-144.

This study examines the effects of attribution retraining in classsroom settings with teacher-directed instruction. This setting differs from the one-to-one experimental or tutorial settings used in previous attribution retraining research.

Thirty-six teachers and 162 learning disabled (LD) children between the ages of 8 and 12 and a comparison group of 50 children in grades three through six served as subjects. LD students participated in a five-week classroom attribution retraining program which was carried out in their special education classroom. One experimental group received training which sought to teach students to apply effort attributions to classroom tasks with mildly frustrating material. A second experimental group received attribution retraining in a success-only context. A third no-treatment control group was also observed.

Retraining procedures involved teacher modeling, student rehearsal of self-statements and effort attributions, and teacher reinforcement for students' self-statements. Attribution retraining teachers completed two workshops (five hours total) designed to teach them how to use reattribution techniques and prepared materials in the classroom. Workshops included simulation exercises in reattribution and self-instruction together with discussions of learned helplessness theory and the effect of intermittent failure. Control teachers' workshops concerned social-emotional needs of exceptional children.

Children were pretested two weeks prior to retraining, and were posttested one week after program completion. The effect of retraining on the following areas was assessed:

1. Student persistence. Persistence was measured with a "bridge task" which consisted of four paper and pencil puzzles, two soluble and two

insoluble. Puzzles were presented in alternating order beginning with an insoluble one. Persistence was measured by (a) amount of time spent on the insoluble puzzle before trying the second (soluble) one, and (b) the number of copies of the insoluble puzzle tried.

2. Student attributions. Children were asked to choose from four attributional categories (effort, luck, ability, or task difficulty) the one that best explained their performance on the bridge (persistence) task. Effort/ability attributions were also assessed using a ten item questionnaire which required students to choose either ability or effort explanations for hypothetical success and failure situations.

3. Learned helplessness. Teachers rated their LD students on a 15 item Helplessness Scale developed by Dweck (1975). Parents also rated their children on a similar helplessness scale adapted for nonteaching situations.

4. Other areas. The Student's Perception of Ability Scale (SPAS) (Chapman and Boersma, 1977), and the Nowicki-Strickland Locus of Control Scale (LOC) for preschoolers and primary grade children were administered to all subjects.

Results comparing LD and nonhandicapped children were analyzed using a series of two way (group x gender) ANOVAS. Compared to average achievers, LD students displayed lower persistence, lower perceptions of ability, and a helpless learning style (as rated by parents) at pretesting.

Attribution retraining analyses included learning disabled boys only. Analysis of covariance revealed that experimental training of both types resulted in a significant increase for both success-only and success-with failure task persistence measures, but no changes were noted in achievement attributions or in perceptions of ability. The locus of control scale and parent and teacher ratings of learned helplessness were not readministered. Since teachers conducted retraining, teachers' ratings might have not been posttested because of possible contamination. No explanation for failure to complete other posttesting or for the examination of only data for boys is provided.

According to the authors, results are encouraging in demonstrating that self-talk procedures which impact attribution style can be a practical classroom teaching strategy. They can be used for developing task persistence and frustration tolerance.

This study is of interest in that it did not use the classical laboratory procedure for attribution retraining, but sought to evaluate the feasibility of presenting concepts from attribution theory to an audience of special educators, and to assess the impact of that presentation on children with learning difficulties. This method of attribution retraining is important to note, since educators are the ones who may be doing retraining with a large number of children. Future studies might consider evaluating the teacher training itself, and how teacher training might be modified for personnel who work with LEP handicapped children.

Pflaum, W. S., & Pascarella, T. E. (1982). Attribution retraining for learning disabled students: Some thoughts on the practical implications of the evidence. Learning Disability Quarterly, 5, 422-426.

Previous research has attempted to change children's attribution patterns via tutoring and reinforcement experiences which focus directly on the attribution process. This study sought to determine whether learning disabled students' attributions could be changed in the natural classroom setting, using the teacher's instructional style rather than specific attribution "tutoring" as a retraining procedure.

Sixty-nine learning disabled and poor-reader subjects from 18 classrooms were assigned to one of three instructional conditions presented by their classroom teachers. Two treatments were based on previous research by the same authors (annotated elsewhere). In a teacher determination of error (TDE) group, teachers directly and explicitly told students whether or not their answers were correct. In a student determination of error (SDE) group, teachers encouraged students to figure out for themselves if their answers made sense in the context of the story being read. Teachers' responses came after naturally occuring failures. The experimental treatment administered to the third group consisted of a reading program in which students gradually experienced a shift from a teacher determination of error mode to a student determination of error mode, and included a gradual increase in teacher encouragement for students to try harder. Treatments continued for 24 group reading lessons.

Students were pre and posttested on the Intellectual Achievement Responsibility Scale (effort items only). Data were analyzed using a multiple regression approach which controlled for pretest effort attribution and reading achievement. No significant differences were found among groups. Results suggest that the experimental procedure was not successful in altering effort attribution.

Based on previous research, the authors state that it appears that reading achievement of learning disabled students can be positively influenced by matching teacher response mode with student attribution style (without attempting to change the student's attributions). They conclude, however, that these beneficial effects of matching may not extend to attribution style. They nonetheless note that since long-term, independent learning may require self-generated effort to continue to try in the face of temporary failure, the most educationally significant contribution may be to continue investigations which focus on attribution training methods suitable to the classroom environment.

This study is important in that it stresses the importance of field research, in this case, research in classrooms, with classroom teachers and under classroom conditions. However, the authors' suggestion that changing attributions in the classroom may not be possible seems overly pessimistic. As they, themselves, point out, results in this study may be due in part to the indirect attribution retraining method used. This study's training procedures did not include self-statements or self-talk, like those which have been successfully used in the direct attribution retraining approach and in

the cognitive behavior modification approach to attribution retraining. In short, the training procedures used in this study may simply have been too weak to produce the desired changes in attributions. Overall, this study suggests that future research which focuses on attribution retraining in the classroom (including retraining for the LEP handicapped child) should incorporate things which assure that the child is an active learner. For example, children should be encouraged to rehearse new patterns of self talk.

Licht, B. G. (1983). Cognitive-motivational factors that contribute to the achievement of learning disabled children. Journal of Learning Disabilities, 16, 403-490.

This position paper reviews the literature concerning motivational factors related to achievement in learning disabled children, as well as studies concerning treatments. The author reviews the attribution model and proposes additions to it.

Licht begins by describing an attribution model of achievement for LD students which includes three components. The first is the notion that failing repeatedly can lead children to believe that they are not capable of overcoming their difficulties. The author mentions a series of studies in which success and failure have been manipulated in achievement situations. These studies have demonstrated that consistently experiencing failure can indeed lead children to view themselves as lacking in ability and to lower their expectancies of future success. According to the author, it has been argued that the kinds of failure that LD childen are likely to experience (those that occur at a high rate, over long periods of time, across a variety of school tasks and teachers) are the ones that are most likely to lead to the development of "helpless" beliefs.

The second component of Licht's attribution model is the idea that children's beliefs about their abilities can affect their achievement efforts and accomplishments. A central tenent here is that certain beliefs imply that continued effort in the face of difficulty will be fruitful, while other beliefs imply that it will not. That is, children who believe that their difficulties are surmountable through their efforts will be most likely to engage in adaptive, achievement-oriented behaviors, while children who believe that their difficulties are due to factors that are stable and beyond their control (particularly insufficient ability) tend to display a maladaptive pattern of achievement-related behaviors. The author again mentions a series of studies that supports this component of her conceptualization.

The third component of Licht's model is the notion that LD children hold beliefs that are likely to foster a maladaptive pattern of achievement-related behaviors. The author mentions studies which document that LD children are likely to develop beliefs that can have a detrimental effect on their subsequent achievement. For instance, she mentions that LD children have lower self-esteem, lower perceptions of their abilities, and a more external locus of control than their non-disabled peers. She also cites research which suggests that LD children make external attributions for success but make

internal attributions for failure. Finally, research which has concluded that LD children's maladaptive beliefs generalize to domains other than that of their disability is reviewed.

Licht next discusses treatment approaches. She mentions several studies that support the use of attribution retraining. There are two treatment components that generally are considered essential. The first is intermittently exposing the child to "failure." The second is teaching the child to attribute these failures to insufficient effort.

Additional components of retraining that may have an impact on the effectiveness of treatment are addressed. These include variables such as the scheduling of failure experiences, the use of a direct rather than an indirect approach (that is, prompting and reinforcing children for verbalizing the appropriate effort attributions, instead of simply telling children that when they fail, they need to try harder), the manner in which the trainer communicates the importance of children's efforts, and the deemphasizing of the competitive aspects of achievement situations.

The author goes on to propose an expansion of the attribution retraining model which includes the following:

1. Attributing one's failures to ineffective task strategies. Since attributing failure or success to effort might cause children to develop an unrealistically high appraisal of their abilities, the author proposes to teach LD children to attribute their failures to ineffective task strategies. She cites research that suggests that an important contributor to the poor performance of LD children is their failure to employ planful, organized strategies that are within their level of ability. The author notes that the idea of teaching LD children to attribute their failure to ineffective strategies does not minimize the importance of also stressing effort as a determinant of academic outcomes. This is important, since the failure of LD children to employ planful, effortful strategies may stem in part from their belief that their efforts will not pay off.

The author concludes that these strategies should be taught within an attributional context; that is, the context should convey more than the idea that a new skill is being taught. It should convey explicitly that an effortful application of these new skills will help the child to overcome his/her difficulties.

2. Adapting instructional methods to match children's attributions. The author mentions research that supports the idea of adapting instructional methods to match the child's attributions. This strategy may be particularly helpful for those children who have experienced a great deal of failure and who may, therefore, be very resistent to any altering of their attributions. The author notes that to effect any long-term and generalized changes in the academic performance of these children, one would need to teach them that they are capable of taking responsibility for their own academic achievement.

3. Teaching a new definition of ability. The author proposes teaching children an alternative way to view intelligence. It should be seen as an accumulation of knowledge and skills that can be increased through one's

efforts, instead of using the traditional view and considering ability as an "entity", the size of which is relatively stable and beyond one's control. The author describes studies that support the notion that orienting children toward an incremental view of intelligence might reduce the debilitating effects of failure.

4. Increasing the incentive effect of academic achievement. The author mentions that the repeated failures of LD children may not only lead to feelings of incompetence, but also may cause these children to devalue their academic work. If this is the case, then even if it is possible to instill these children with the confidence that they are capable of mastering their work, they may still exert little effort toward this end. It may, therefore, be fruitful to examine how different incentive systems interact with attribution retraining.

This is a key article in the attribution retraining literature since it gives a broad review of the literature and puts it together to develop a model. The article is well written and is successful in summarizing a large body of research. It is important to take the suggestions from this article into consideration when implementing attribution retraining programs with LEP handicapped children, and to consider the additions to the attribution retraining model Licht suggests when designing future retraining research and programs.

Conclusions

Several conclusions about handicapped and low-achieving children's attributional processes seem to follow from the literature reviewed here. First, these studies strongly support the basic assumption of attribution theory that the way in which causes are perceived mediates reponses to future events. Nearly all of these studies of handicapped children's academic achievement and attributions suggest that their performance is hurt by the way in which they view their successes and failures.

In addition, strong support for the idea that handicapped and low-achieving children's attributions for academic successes and failures differ from their normally achieving counterparts' attributions is found here. The handicapped child appears to be likely to see success as the result of chance-like, external factors, while failure is attributed to the self. The normally or high-achieving child views these events in an almost opposite way. Success is seen as the result of personal factors (such as ability or effort), while failure is most often attributed to things which can be changed, such as a lack of effort, or the difficulty of the task. Overall, the learned helplessness model of performance decrement in the face of seemingly uncontrollable adversive events (or, in the classroom situation, failure) seems applicable to the handicapped child.

Studies which have attempted to alter the handicapped child's debilitating perceptions suggest that classroom instruction can and should be matched to attribution patterns, and that these patterns can eventually be changed. A variety of methods of direct attribution retraining methods seem to have resulted in improvement in handicapped or "helpless" children's attribution patterns. However, not all studies report success (for example,

indirect methods did not produce change in a classroom situation), and few studies have assessed follow-up or generalization effects of training. There would seem to be a need for future research to identify a set of "best practices" for attribution retraining situations. For example, evidence thus far suggests that retraining which does not provide experience in coping with failure is not successful, and that the use of reinforcement in retraining programs must be carefully monitored. There may be other critical training elements which are yet to be identified. In addition (as Canino [1981] and the studies by Bugental et al. [1977] and by Pascarella et al. [1983] suggest), there may be a need to match training and even classroom instruction to the attribution patterns of the child. Finally, it is desirable to look at what other areas might be included in attribution retraining. For example, Licht has suggested that attribution retraining and training in cognitive strategies might be profitably combined. Overall, there is a need to identify the characteristics of the LEP handicapped child which will best serve to predict the success of attribution retraining, a need to develop ways to diagnose those characterstics, and a need to teach special education teachers how to change the LEP handicapped child's attributions if evidence that retraining can enhance these children's motivation and achievement is found.

Given present research, however, it will be difficult to take the LEP child's language, racial/ethnic and cultural characteristics into account when planning attribution retraining. The only study which has considered sociocultural variations in causal attribution patterns (Willig et al., 1983) suggests that variation does exist, but sociocultural variables have not yet been considered in an attribution retraining context. When the idea of attribution retraining for the LEP handicapped child is considered, there is a need for research in every area suggested thus far, including causal

attributions and their dimensions, how these attributions influence persistence and achievement, and how debilitating attributions (if they exist) might effectively be changed.

However, it would seem most profitable if future research efforts did not limit themselves only to finding better ways to "fix" maladaptive attributions. While it seems likely that this information will be needed, it would also seem desirable that future research begin to uncover the information needed to take a preventative or even motivation-enhancing approach to children's academic attributions. For example, future studies might consider what elements of teacher feedback and classroom interaction lead the child to believe that failure is an inevitable outcome, so that teachers could be trained to avoid these practices. In addition, ways to identify the child whose work habits, attitudes or other chracteristics make him/her likely to begin making maladaptive attributions might be identified and communicated to teachers and other school personnel. These characteristics will need to be identified for the LEP handicapped child as well as for the general school population if a primary prevention approach to learned helplessness in the classoom is to be implemented.

Appendix

Background Information on the Achievement Attribution Theory

Weiner, B. (1979). A theory of motivation for some classroom experiences. Journal of Educational Psychology, 71, 3-25.

In this theoretical paper, Weiner summarizes findings about the attributional approach to classroom motivation, and addresses the topic of a general theory of motivation which these findings may generate.

Weiner begins by stating that a central assumption of attribution theory is that an individual's search for understanding is a primary motivation. In a classroom setting, this leads to questions of "Why did I succeed or fail?", although a clear statement of when these questions are asked remains lacking. The initial conception of classroom attribution theory (Weiner et al., 1971) suggested that four main answers for academic "why" questions were used: luck, ability, effort and task difficulty. Subsequent research has added alternative causes such as others (teacher, student, or family), motivation (attention and interest), habits, and attitudes to those originally suggested, and Weiner states that a "myriad" of perceived causes for success and failure, which may differ across cultural settings, appear to exist.

Since many causes exist, Weiner considers it critical for attribution theory to create a classification scheme for them. An initial taxonomy, which borrows from works of Rotter and Heider, contains three dimensions. The first is internality-externality or locus of control, and classifies causes as within or outside of the actor. The second dimension, identified as stability, defines causes on a variant-invariant continuum (across situations or times). A third dimension, which concerns volition, was labelled intentionality, although Weiner suggests that this dimension is better labeled controllability. Weiner notes that these three dimensions result in an 8-cell classification scheme for perceived causes, although problems with it remain. He suggests that other dimensions are likely to arise as attribution theory and research develop, and uses the globality dimension (which captures the concept of stimulus generalization) as an example of a possible "new dimension". Globality is seen as related to the inclusiveness of an attribution; for example, one's ability may be perceived as task-specific ("I failed because I am poor at math") or as a general trait influencing performance in a wide variety of settings ("I failed because I'm dumb"). Weiner concludes his discussion of possible dimensions by reviewing empirical evidence which provides some, but not perfect, support for the dimensions identified thus far.

Weiner next considers how each dimension might function in determining future behavior. He contends that each dimension of causality has a "primary psychological function" as well as other effects. He suggests the following relationships: stability relates to the expectancy of change following success or failure; locus of causality (or control) relates to self-esteem and other affective variables; and control by others (intentionality or controllability) relates to helping, evaluation and liking.

Weiner next examines each dimension separately. In considering the stability dimension, Weiner first reviews research related to it, and cites a number of studies which find that causal ascriptions for past performance are determinants of future goal expectancies, a relationship he describes as "proven definitively". He reiterates that expectancy shifts relate to the stability dimension, and cites a number of studies which present supporting evidence. He notes that one of his disappointments with current research is the fact that locus of control researchers do not yet realize the link between stability and expectancy change.

Weiner reviews a model of expectancy shift developed by Valle and Frieze which postulates that predictions (future expectancies) are a function of initial expectancies plus the degree to which outcomes are attributed to stable causes. He suggests that the model is important to attribution change programs in that it suggests that the causes of performance must be altered in a gradual way, which includes incremental changes in expectancy for the future.

Weiner further suggests that the concept of stability is useful in explaining the phenomenon of experimental extinction. According to Weiner, extinction (or the ending of behavior) occurs when causal attributions lead to the belief that responses are no longer instrumental to goal attainment, while resistance to extinction (or persistence) is facilitated when the lack of reinforcement for a response is attributed to an unstable cause (such as bad luck). Attribution to an unstable cause produces "hope". Weiner states that this paradigm explains the success of attribution retraining programs which encourage attributions to an unstable cause (effort) rather than a stable one (ability).

Weiner next discusses the locus (internality-externaliy) dimension. He states that his initial attributional restatement of achievement motivation related internal locus of causality to greater affect than would be asociated with external locus. However, it became evident that external causes (such as teacher bias) were also related to extreme emotional reaction, suggesting the relationship between locus attribution and affect was more complex than initially postulated. Based on a series of studies which explore this relationship, Weiner proposes that three sources (rather than just locus) produce affect in achievement situations. First, some emotion is tied directly to the outcome, without any mediating variable. Second, there are attributionally mediated emotions. For example, the general "good feeling" associated with success may generate gratitude if success is attributed to help from another. Finally, there are affects associated with self-esteem which are mediated by the role that the actor feels he, himself, played in the outcome. For example, he may feel pride, if the success that came with the help of another was also facilitated by the actor's effort. Weiner notes that causal stability also ties to affect in areas such as depression, which is most likely to occur when outcomes are attributed to stable causes. Weiner concludes his discussion of the locus area with the hope that research into the "affective life" of the classroom is continued.

Weiner notes that while his discussion of stability and locus of causality have concerned mainly self perception, the final dimension of causal

attributions (controllability) relates to the perception of other individuals. He cites evidence that helping, evaluation of others and sentiments about other people (mainly about lonely persons) are mediated by the perceiver's attributions about such things as why another is in need of help, or how much effort others have expended.

Weiner suggests that the theory described thus far has relevance for the classroom in that it examines success and failure attributions, expectancy changes, change programs for achievement and self-concept, sources of emotion, and responses to others. He also suggests several other areas to which this theory may apply. These include hyperactivity, mastery, parole decisions, affiliation, and learned helplessness. Only those attributional analyses germaine to the classroom will be described here.

Weiner analyzes drug therapy for hyperactivity as follows: the prescription of drugs implies a stable, uncontrollable cause for hyperactivity. Therefore, the child and his parents are not responsible for behavior displayed, and guilt and other negative emotions are minimized. However, these attributions fix future expectancies (due to the stability of the perceived cause) and may in the long run interfere with effective coping and behavior change. Weiner presents an analysis of mastery which suggests the following sequence: response-outcome covariation which leads to the perception of internal causation. (For example, children learn that they can be called upon when they raise their hand, i.e, that they, personally, can cause the teacher to respond to them.) This results in positive affects of competence and pride, and leads to subsequent choice of performing the response again. Finally, Weiner considers the performance deficits which accompany learned helplessness (i.e., the belief that there is no association between responding and environmental outcomes). The learned-helpless individual believes that the likelihood of an event is independent of what he or she does; Weiner suggests that this is the result of attribution of response-outcome inconsistency to global, stable, internal causes. These attributions produce low expectancy for future success and heightened negative affect.

Weiner concludes that the attributional theory of achievement motivation can be applied to areas outside the achievement domain. He suggests that the theory has the potential to become a general conception of and theory for all motivation.

This article brings together a wide variety of research, and provides an excellent basis for understanding attribution theory as it might apply to the classroom and to the LEP handicapped child. The relationships between dimensions of causality and affect which Weiner postulates would seem to be an interesting area to consider as a part of attribution retraining research.

Frieze, I. H. (1981). Children's attributions for success and failure. In: S. S. Brehm, S. M. Kassin, & F. X. Gibson, (Eds.), Developmental social psychology: Theory and research, pp. 51-71. New York: Oxford University Press.

Frieze states that her chapter has three major purposes: (a) to review basic principles of the attribution model for achievement behavior, (b) to examine how the model applies to children of various ages, and (c) to suggest possible directions for expanding the achievement attribution model for children.

She begins by discussing the development of the achievement attribution model. In 1971, Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum proposed a model for looking at affective and cognitive reactions to success or failure as a function of the causal attributions used to explain the outcome. This model "conceptualizes the achievement process as a multistage process involving an achievement event that is first interpreted as a success or failure and then given an attribution or causal explanation for why this success or failure occurred. This causal attribution has subsequent consequences for affect and for future expectancies which together determine future achievement orientation and behavior in a new situation" (p. 52).

Four causal attributions were initially postulated: ability, luck, effort and task ease. Subsequent research suggested that these were too simple. For example, research with college students suggested that effort might be divided into preparation before an event and mood during the event itself.

Frieze notes that two main methods have been used to determine causal attributions. First, subjects have simply been asked why an event occurred. Second, they have been given a list of possible causative factors and asked to rate how much of a role each factor played in a given outcome. Each of these methods has advantages and disadvantages when considered from reliability, statistical and completeness points of view, and use of the two different methods may produce different attributions for the same event. Frieze suggests that the method chosen should be determined by research goals, i.e., when the set of causes for a situation or population group is being determined, an open-ended method is needed, while when the differences in attributions across conditions or the relationship between attributions and other behavior is examined, the more structured rating method will be needed.

Continuing her discussion of the achievement attribution theory itself, Frieze describes the underlying dimensions of the causal categories first suggested by the theory. These three dimensions are internality, stability and intentionality. These dimensions are conceptualized as being independent and each dimension is seen as representing a continuum. Internality concerns whether the cause of an event is associated with its primary actor or is outside of him/her. Intentionality (now called controllability by Weiner) refers to whether the actor or outside forces hold final control of the outcome. While this is related to internality, it is not the same. For example, effort is internal and intentional, while ability or mood are internal but unintentional. Stability refers to possible change over time attributed to a set of causes. Frieze notes that Abramson, Seligman and Teasdale (1978) have suggested a fourth dimension by limiting the stability dimension to a specific situation, and using a globality dimension to refer to the generalizing of a cause across situations. In addition, some researchers suggest that causal dimensions may vary across people and groups.

The theoretical attribution achievement model makes predictions about the consequences of attributions for expectancies and affective outcomes. For example, research has supported the idea that stability of attributions is related to changes in expectancy. Expectancy is most likely to change when outcomes are attributed to an unstable cause; e.g., an attribution made to luck (a cause which will probably change over time) is more likely to produce a change in expectancy than an attribution to ability (a cause which tends to remain constant). In addition, outcomes which match expectancy tend to be attributed to stable causes, while unexpected outcomes are attributed to unstable ones. Frieze notes that together, these relationships imply that expectancies for a specific task may be difficult to change, and suggests a self-fulfilling prophecy model. Those who expect to fail will reject (attribute to unstable causes) an unexpected success; those who expect to succeed will reject (attribute to unstable causes) an unexpected failure. Finally, outcomes associated with internal and/or intentional perceived causes have been found to cause stronger affective reactions than events perceived to have external and/or unintentional causes. The stability of perceived cause also influences affective reaction in that failure attributed to a stable cause has been associated with depression and helpless resignation.

In reviewing studies that have considered the forming of causal attributions, Frieze finds that "research with college students has indicated that certain types of information are commonly and consistently used in forming causal attributions for success or failure" (p. 59). These include initial expectancy of success, the outcome itself, past history, the performance of others, incentive offered to do well, mood, information about cheating, and information about the teacher (if one is involved).

One problem which has arisen as research to validate the attribution achievement model is carried out, is that the categorization of an event as a success or failure appears to be a complex and subjective process. Early research assumed that experimenter feedback or norms could determine subjects' evaluations of outcomes; however, later research has suggested that the experimenter's interpretation of outcome is not always accepted. A study of fifth grade students reports a correlation between actual scores and students' success ratings of .74, and also found that the variables which predicted objective outcomes (test scores) and subjective outcomes (success ratings) were not the same. Subjective success was related to affective reaction while objective success was not. Other factors which appear to be important in determining success/failure outcome judgments include having done better than expected, improvement over one's minimal performance, how well others are doing, and doing better than one has ever done. There also appears to be an interaction between perception of success and causal attributions. Internal causal attributions appear to give the strongest feelings of success or failure. Frieze cites evidence that suggests that this pattern may be a result of cultural values. Finally, the determination of success or failure appears to be related to the value the individual places upon doing well within a particular domain. She notes that children's success values have not been systematically studied, and suggests that explorations of their relationship to gender, class and ethnicity should be explored.

In concluding her description of the achievement attribution model, Frieze states that empirical support for it is good, but "not always as

supportive of the theory as one would like" (p. 63). She suggests that many variables impinge on and influence the attribution process. She reviews research on four of these variables: the age of the perceiver, demographic factors (such as sex or SES), other people, and task-related variables.

Frieze states that research on children's attributions has been carried out mainly during the past 10 years. Children in the fourth grade and older appear to be able to respond to both open-ended attribution questions and attribution rating scales. Studies which involve very young children have generally relied upon open-ended questions. These studies have suggested that children as young as six years of age produce familiar attribution categories, and produce a variety of causal attributions, including ability, effort, interest, mood, luck, personality, etc.

Studies which have considered developmental changes in the use of attributional dimensions are limited in number, and have reported conflicting results. Frieze suggests a need for continued research in this area.

Other developmental studies, which have considered how information is used to formulate attributions, have found that 4-year olds use information in ways similar to adults, if the information is presented simply. Evidence also suggests that the performance of another is not used in evaluating outcomes until at least age 5. Children also become more able to blend effort and ability into their attributions as they mature, and reactions to success and failure, as well as the way success and failure are conceptualized, change with development.

Sex differences in attribution patterns have also been documented. A number of studies have found that females have lower expectancies for success than males, a belief that Frieze suggests can be "debilitating."

Research which has considered SES and ethnicity related differences in attribution patterns has repeatedly suggested that Blacks make more external attributions than Anglos. Blacks have also been found to have higher achievement expectancies than Anglos, even in the face of lower performance. Finally, several studies suggest that lower-class or disadvantaged groups have distinct patterns of attributions, although some results about these patterns conflict. Overall, Frieze summarizes SES and ethnicity related results by saying "this makes a rather confusing picture, but it does suggest that both class and race affect patterns of attribution" (p. 68).

In considering the influence of others in the attribution process, Frieze notes several points at which this influence may occur. Specifically, others provide standards for comparison, and research suggests that by the second grade, children can give fairly accurate estimates of their classmates' performance. Others can also hold expectations which influence performance. Parental support has been related to achievement motivation in children, and teacher expectations have been shown to influence student performance. Frieze also notes that the expectations of others for school children can influence the experiences they have, in that parents and teachers make determinations about educational programs, including decisions about special education.

Finally, Frieze reviews the effects of different types of tasks on causal attributions. The task itself, success or failure on a task, and the sex appropriateness of the task have all been shown to have an influence. For example, adults tend to expect greater success and to make more internal attributions for success on a sex-appropriate task.

Frieze concludes that the achievement attribution model is one which seems to explain the attributions of school-age children. However, she points out the need to develop methods and conduct studies which further explore very young children's attributions. She also notes that areas which have been explored for adults, such as how success and failure are evaluated, and the relationship between attributions and affective responses, have yet to be explored for children. Overall, there is a need for continued research to determine how children's causal attributions work, and how children's attribution patterns are similar to and different from those of adults.

This chapter summarizes a large amount of information, and suggests a number of areas in which research about LEP handicapped children might be carried out. Since this group has not been considered in studies which assess racial/ethnic and SES influences on attribution patterns, it would seem appropriate to begin by determining what causal attributions and dimensions this group uses, and then to look at other areas such as how attributions affect expectancies and how success and failure are determined.

References

Ames, C. (1978). Children's achievement attributions and self-reinforcement: Effects of self-concept and competitive reward structure. Journal of Educational Psychology, 70(3), 345-355.

Andrews, R. C. & Debus, L. R. (1978). Persistence and the causal perception of failure: Modifying cognitive attributions. Journal of Educational Psychology, 70(2), 154-156.

Aponik, D. A. & Dembo, M. H. (1983). LD and normal adolescents' causal attributions of success and failure at different levels of task difficulty. Learning Disability Quarterly, 6(1), 31-39.

Bugental, D. B., Whalen, C. K., & Henker, B. (1977). Causal attributions of hyperactive children and motivational assumptions of two behavior-change approaches: Evidence for an interactionist position. Child Development, 48, 874-884.

Canino, F. J. (1981). Learned-helplessness theory: Implications for research in learning disabilities. The Journal of Special Education, 15, 471-484.

Chapin, M. & Dyck, D. G. (1976). Persistence in children's reading behavior as a function of N length and attribution retraining. Journal of Abnormal Psychology, 85, 511-515.

Coleman, J. S., et. al. (1966). Equality of educational opportunity. U.S. Department of Health, Education, and Welfare, Office of Education, Washington, DC: U.S. Government Printing Office.

Diener, C. I., & Dweck, C. S. (1980). An analysis of learned helplessness: II. The process of success. Journal of Personality and Social Psychology, 38, 940-952.

Diener, C. I., & Dweck, C. S. (1978). An analysis of learned helplessness: Continuous changes in performance, strategy, and achievement cognitions following failure. Journal of Personality and Social Psychology, 36, 451-462.

Dweck, C. S. (1975). The role of expectations and attributions in the alleviation of learned helplessness. Journal of Personality and Social Psychology, 31, 674-685.

Dweck, C. S., & Repucci, N. D. (1973). Learned helplessness and reinforcement responsibility in children. Journal of Personality and Social Psychology, 25, 109-116.

Fowler, W. J., & Peterson, P. L. (1981). Increasing reading persistence and altering attributional style of learned helpless children. Journal of Educational Psychology, 73, 251-260.

Frieze, I. H. (1981). Children's attributions for success and failure. In S. S. Brehm, S. M. Kassin, & F. X. Gibson (Eds.), Developmental social psychology: Theory and research, pp. 51-71. New York: Oxford University Press.

Grimes, L. (1981). Learned helplessness and attribution theory: Redefining children's learning problems. Learning Disability Quarterly, 4, 91-100.

Hill, C. L., & Hill, K. A. (1982). Achievement attributions of learning-disabled boys. Psychological Reports, 51, 979-982.

Kleinhammer-Trammill, P. J., Tramill, J. L., Schrepel, S. N., & Davis, S. F. (1983). Learned helplessness in learning disabled adolescents as a function of noncontingent rewards. Learning Disability Quarterly, 6(1), 61-66.

Licht, B. (1983). Cognitive-motivational factors that contribute to the achievement of learning-disabled children. Journal of Learning Disabilities, 16, 403-490.

McDonnell, T. E. (1983). Attribution theory and school social work. Social Work in Education, 5(2), 97-108.

Pascarella, E. T., & Pflaum, S. (1981). The interaction of children's attributions and level of control over error in reading instruction. Journal of Educational Psychology, 73, 533-540.

Pascarella, E. T., Pflaum, S. W., Bryan, T. H., & Pearl, R. A. (1983). Interaction of internal attribution for effort and teacher responses mode in reading instruction: A replication note. American Educational Research Journal, 20(2), 269-276.

Pearl, R. (1982). LD children's attributions for success and failure: A replication with a labeled LD sample. Learning Disability Quarterly, 5, 173-176.

Pearl, R., Bryan, T., & Donahue, M. (1980). Learning disabled children's attributions for success and failure. Learning Disability Quarterly, 3, 3-9.

Pearl, R., Bryan, T., & Herzog, A. (1983). Learning disabled and nondisabled children's strategy analyses under high and low success conditions. Learning Disability Quarterly, 6, 67-74.

Pflaum, W. S., & Pascarella, E. T. (1982). Attribution retraining for learning-disabled students: Some thoughts on the practical implications of the evidence. Learning Disability Quarterly, 5, 422-426.

Reiher, H. R., & Dembo, H. M. (1984). Changing academic task persistence through a self-instructional program. Contemporary Educational Psychology, 9, 894-895.

Swidler, P. J., & Diener, C. I. (May, 1983). Learned helplessness: An analysis of failure avoidance through maladaptive overpersistence. Paper presented at the Annual Meeting of the Midwestern Psychological Association, Chicago. (ERIC Document Reproduction Service Number ED 237 207)

Thomas, A. (1979). Learned helplessness and expectancy factors: Implications for research in learning disabilities. Review of Educational Research, 49(2), 208-221.

Thomas, A., & Pashley, B. (1982). Effects of classroom training on LD students' task persistence and attributions. Learning Disability Quarterly, 5, 133-144.

Tollefson, N., Tracy, D. B., Johnsen, E. P., Buenning, M., Farmer, A., & Barke, C. R. (1982). Attribution patterns of learning disabled adolescents. Learning Disability Quarterly, 5, 14-20.

Weiner, B. (1979). A theory of motivation for some classroom experience. Journal of Educational Psychology, 71, 3-25.

Willig, A. C., Harnisch, D. L., Hill, I. T., & Maehr, L. (1983). Sociocultural and educational correlates of success-failure attributions and evaluation anxiety in the school setting for Black, Hispanic and Anglo children. American Educational Research Journal, 20, 385-410.